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SUPER SABOTAGE

THE independent pharmacist, aided by organized pharmacy, has been striving to improve his position among the health professions and to retain his rightful, unique place in the American economy. We are witnessing a highly significant and insidious effort within a segment of the drug industry to sabotage this upbuilding of retail pharmacy at the level where most people meet the pharmacist in the exercise of his professional functions. We refer particularly to the policy recently announced by United-Rexall Drug Inc. through Justin W. Dart, the firm's nonpharmacist president.

Glittering propaganda brochures for Rexallites insist that their salvation lies in pirating the business of other small shops on Main Street. Diagrammatically they are shown how the pharmacy can take over the business of the hardware, grocery, jewelry store, confectionery, cigar store, five-and-dime, stationer's store, restaurant and department store, not to forget electrical appliances. Once Rexall pharmacies are converted to supermarkets, press reports indicate that self-service operation will be up for consideration.

Without much doubt these objectives can be easily achieved in the various merchandising chains directly owned and operated by United-Rexall. But some 10,000 independent pharmacists, reportedly holding the Rexall franchise, will want to take a long look before jumping into this merchandising maelstrom.

Despite advantages of vastly increased distribution volume which may accrue to the parent United-Rexall firm from this policy, Mr. Dart is probably sincere in also wishing to help the pharmacist who holds a franchise. But any claim that the long range, personal interests of the pharmacist, or of the public, will be in anywise served is certainly open to serious doubt. We are convinced that the attention to supermarket operation required for its success will seriously hinder the retail pharmacist from carrying on normal activities required to maintain his identity as a professional man, and the unique advantages that go with it.

Supermarket drugstore operation requires the pharmacist to compete with grocery supermarkets on their own ground and with their own weapons. Not a pleasant prospect either for the pharmacist or the profession he has chosen to represent.

The full import of a revolutionary policy of this type should be carefully considered and clearly understood by every pharmacist. The backing and promotion is aggressive and powerful. Whether or not pharmacists take a "free" ride on this Trojan horse, or others of its ilk, will answer an important question: Will preservation of the professional opportunity and service of independent pharmacists involve a vigorous campaign against usurpation of the practice of pharmacy in any of its phases by nonprofessional tradesmen; or will the profession become even more of a house divided against itself, a field for internecine struggle between pharmacies in name and pharmacies in fact?

There can be no objection to better departmentalization and streamlined operations in any pharmacy. We need it. This does not require further de-emphasis of the pharmacy's basic function as a community health center. Efforts to make supermarkets out of the traditional pharmacy play into the hands of the unqualified who wish to encroach upon the profession. Those who promote or accede to this objective will weaken the pharmacist's rightful claim to legislative restrictions on the distribution of drugs under proper professional supervision and conditions.

It is an obvious and ancient fact that governments throughout the world recognize that a profession so vitally affecting the citizen's health must be practiced under adequate safeguards by professional personnel in a professionally acceptable establishment.

Developments such as those here discussed will make it increasingly necessary for our state boards and legislatures to determine the limits of legitimate pharmacy. An important public question then arises: What is the difference between a supermarket that has added a drug department and a pharmacy which has chosen to become a supermarket?

Obviously pharmacy must object to "superstores" within its own ranks, as well as to the supermarket with a drug department—if we are to be fair to the public and preserve traditional high concepts of professional service.

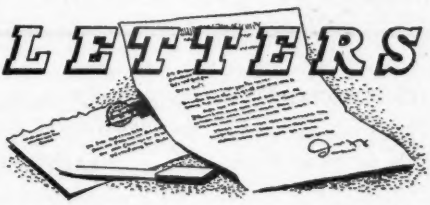
The independent pharmacist must strengthen his position by increasing emphasis on his unique, personalized health services and role in medical care. Pharmacy constitutes an essential service that must be supplied. If, through sabotage or neglect, such service ever were not supplied adequately in the traditional corner pharmacy, public officials undoubtedly would assure that it be supplied elsewhere.

BUILDING GOOD WILL

Sirs:

Thank you for your nice letter regarding the advertising appearing in the *Beaver Falls News Tribune*. These ads are part of a series furnished to us by Lilly, and I am happy to say that a considerable number of persons have remarked about them.

It is part of our effort to cooperate with physicians and establish good will among the local people. I have felt that being in pharmacy is more than a business, and it is part of the job to guide people of the community to the proper use of drugs under medical supervision.



There are too many in our profession, and I think also in the medical profession, who are apt to overlook the main purpose of their education: to keep the welfare of the patient at heart. It is such things thrown aside for the almighty dollar that cause demand for socialized medicine, etc.

Beaver Falls, Pa. AL KAUFMAN

RADIO'S OBJECTIONABLE COMMERCIALS

Sirs:

In Monday's *Washington Post* I happened to see reported that your ASSOCIATION is advocating curbing the very unpleasant form of advertising now coming over the radio, particularly regarding some drug products. It is to be hoped that you are successful, for it is a disgraceful thing.

I for one make it a rule never to purchase articles or products improperly advertised. . . . It is time someone with a voice loud enough to be heard, like your ASSOCIATION, should speak.

Washington, D. C. ALICE CHADWICK

A PHARMACIST-PHILATELIST

Sirs:

I am a young British hospital pharmacist, aged twenty-one. I would very much like to correspond with an American hospital pharmacist who is also a philatelist. Can you help me? The address is: Pharmaceutical Department, Cardiff Royal Infirmary, Newport Road, Cardiff, Glamorgan, South Wales, England.

RAYMOND E. M. DAVIES

LIQUOR SALES AND PHARMACY INCOMPATIBLE

Sirs:

The sale of liquor has as much place in a retail pharmacy as a bar has in a physician's office. Yet this condition exists as a reality in a number of states.

Sometimes a pharmacy puts such an emphasis on the sale of liquor that it is a complete misnomer to call it a pharmacy. This practice is as degrading to the profession as any other one can think of. In certain communities an entirely professional pharmacy may be financially unsound, but surely a pharmacist with some pride in his profession can find other means of supplementing his sales without resorting to the sale of liquor.

The pharmaceutical associations and state boards could do much to remedy this particular situation. The professional status of pharmacy must not be jeopardized. Pharmacy and liquor are incompatible under one roof.

FRANK P. PIRANEO
Brooklyn, N. Y.

NO BETTER OCCUPATION

Sirs:

After fifty-two years in retail pharmacy I have decided to retire. . . . In my long association with retail pharmacy I have never regretted that I chose the occupation that has been my life's work. I have experienced many changes: hours from 14 to 8 a day; salary from $18 to $75 a week.

I can truly say that I know of no better occupation. But the druggist must be a druggist in every sense of the word, and willing to work. He must operate a *drugstore*, not a department or accomodation shop.

I am proud of being a member of the AMERICAN PHARMACEUTICAL ASSOCIATION, and my best wishes for its future.

Chicago, Ill. JOHN J. SAMUELS

APPRECIATIVE SUPPORT

Sirs:

I am enclosing $5 for dues and the *Practical Pharmacy Edition* of the JOURNAL. The JOURNAL has been a splendid help to me while in the Army, and I don't want to be without it now that I am back.

We appreciate the fine work you are doing for us and it is a source of pride to be a member of the A. PH. A.

Hattiesburg, Miss. WILLIAM K. EDMISTON

Sirs:

. . . I am glad to enclose my check for membership. The JOURNAL alone is worth that much to me, to say nothing of having a national organization at our seat of government to watch out for our interests.

Please be assured that I shall deem it a pleasant duty to renew my membership each time I receive a notice requesting it.

Maysville, Ky. REX PARKER

STRAIGHT FROM HEADQUARTERS

by ROBERT P. FISCHELIS, Secretary
AMERICAN PHARMACEUTICAL ASSOCIATION

DISCUSSIONS WHICH LED TO ACTIONS

REPORTS from all groups represented at the Pittsburgh convention of the AMERICAN PHARMACEUTICAL ASSOCIATION seem to be unanimous in their approval of the procedures, the program and the accomplishments of this first postwar convention in which all branches of pharmacy were represented.

In previous paragraphs in this column we pointed out some of the problems which confront the profession at this time, and we indicated that the House of Delegates of the AMERICAN PHARMACEUTICAL ASSOCIATION provided the best forum in American pharmacy for the discussion of these problems.

It is of interest to review the ten listed in the August number of THIS JOURNAL (page 339), and the actions taken at the convention which may be briefly summarized as follows:

It was stated that constructive action would be necessary in determining ASSOCIATION policies with respect to the enrollment of pharmacy students. The convention expressed strong disapproval of the acceptance by colleges of pharmacy of student bodies in excess of classroom, laboratory and teaching facilities. It likewise expressed vigorous opposition to any legislation which would in any wise lower, impair or damage educational and licensure standards now in effect.

It was stated that improvement of pharmacy faculties required attention. The convention strongly urged colleges of pharmacy to look upon inadequate staffs of teachers, which had to be employed during the war period when manpower in the teaching field was as short as in other fields, as a temporary expedient. It was further urged that all teachers that do not possess satisfactory technical and scientific qualifications be replaced as soon as feasible.

The necessity for constructive activities in determining policies with regard to control of outlets for the distribution of drugs was emphasized. The convention recorded itself against any lowering of pharmaceutical standards and endorsed the pharmaceutical survey which will include a study of this situation.

BARBITURATE REGULATION

THE necessity for constructive activities in determining policies for the control of the distribution of barbiturates was high on the list of subjects to be considered. The convention recorded itself against Federal legislation in this field and urged that pharmacists and pharmaceutical organizations give their earnest support and cooperation to the enactment of adequate state legislation for the control of use and distribution of barbiturates. This subject evoked more debate in the House of Delegates than any other. There was general agreement that American pharmacy must support a program which will record its practitioners on the side of the public interest without adding unnecessarily to the restriction of the legitimate use of these valuable drugs.

It is expected that the ASSOCIATION will join the efforts of other pharmaceutical organizations operating through the National Drug Trade Conference in working out provisions for a uniform state act to control the distribution of these drugs. A number of meetings of representatives of the National Drug Trade Conference have already been held to effectuate this purpose.

SICKNESS INSURANCE

SICKNESS insurance with special reference to the extent and method of coverage of pharmaceutical services was given consideration and the ASSOCIATION reaffirmed its previous position which pledged it to cooperate with any adequate plans to extend medical care which utilizes existing medical facilities and which guarantees the right of free choice of pharmacist, dentist, nurse, physician, or other medical practitioner.

ARMY PHARMACY CORPS

IT WAS stated that acceptance of a place in the proposed medical service units in the Army and Navy would call for active discussion. The

convention had the benefit of a clear statement of objectives on the part of the Surgeon General of the Army and an equally clear statement of the opposition of pharmacists to any plan for pharmaceutical service in the Army which would abolish the Pharmacy Corps created by Act of Congress in 1943. The latter statement was made by Dr. R. L. Swain at the completion of Surgeon General Norman T. Kirk's address. The official action of the ASSOCIATION embodied in a resolution calls for strong expression by the AMERICAN PHARMACEUTICAL ASSOCIATION in favor of maintaining and activating the Pharmacy Corps in the Army and vigorous opposition to any attempt to modify or disregard the intention of Congress when it passed the law creating the Pharmacy Corps.

There is considerable evidence that the attitude of the Surgeon General of the Army toward pharmacy's contribution to the welfare of the soldier has undergone a change for the better. General Kirk has publicly announced the functions which pharmacists are competent to perform and he has given assurance that pharmaceutical service in the Army will be under the supervision of pharmacists although he also emphasizes the fact that the medical department of the Army intends to retain full control over all medical and auxiliary medical services. Compromising the means of arriving at the objectives of the pharmaceutical profession and those of the Surgeon General, which are certainly in unison as far as the welfare of the men in the Army is concerned, will require a high brand of statesmanship on both sides. It hardly seems necessary to require the sacrifice of the Pharmacy Corps in order to accomplish the Surgeon General's objectives for better pharmaceutical service to the soldier.

THE PHARMACEUTICAL SURVEY

PERHAPS no topic received greater attention in more places during the convention than the pharmaceutical survey now being conducted by the American Council on Education under the direction of Dr. Edward C. Elliott. No organization, section or affiliate of the AMERICAN PHARMACEUTICAL ASSOCIATION which held separate meetings at Pittsburgh failed to contribute to the pharmaceutical education of the former president of Purdue. He is an apt pupil. He knows how to obtain essential information. He will doubtless demonstrate that he is a past master at consolidating factual data into terse expressions denoting things as they are and not as they seem. One can look forward to the revelations of this survey in the expectation that it will stimulate thought, action and new approaches to old problems in the interest of better service to those who require medical care. The ASSOCIATION expressed its earnest approval of the survey and pledged its full cooperation to those concerned with the progress and success of this project.

FOOD AND DRUG REGULATIONS

THE ASSOCIATION listened intently to the message brought to it by Commissioner Dunbar of the Food and Drug Administration. There was some disappointment at the one-sided presentation of the discussion of warning notices on the labels of prescriptions. Fortunately Dr. Austin Smith, Secretary of the Council on Pharmacy and Chemistry, was present when an editorial appearing in the *Journal of the American Medical Association* with regard to warning notices on prescriptions on thiouracil was quoted in support of the position of the Food and Drug Administration in favor of such warnings on labels of prescriptions. Dr. Smith promptly pointed out that the editorial referred to was an informative statement to physicians intended to emphasize the pharmacist's position in carrying out the mandates of the Food and Drug Administration with respect to such labeling. Dr. Smith emphasized that it was not an editorial in favor of upsetting the age-old relationship between physician, pharmacist and patient which calls for the labeling of a prescription in accordance with the directions of the physician.

At no time was the improved relationship between organized medicine and organized pharmacy more clearly demonstrated than in the participation of the representative of the American Medical Association in this and other discussions in the House of Delegates. We are very thankful to the Council on Pharmacy and Chemistry of the American Medical Association for making it possible to have Dr. Smith present at our convention to participate in discussions involving cooperation between the professions of medicine and pharmacy.

PRACTICAL IDEALISM AND GOOD SENSE

AT Pittsburgh in August, 1946, the pharmacists of America, through their chosen delegates and in the general and sectional meetings, came to grips with many outstanding and difficult problems in addition to those mentioned.

As we survey the results of discussions and review the mandates given to the administrative officers we can take pride in the practical idealism and good sense displayed in meeting issues of far-reaching importance to American pharmacy.

DRUG TRENDS AND THE NEW NATIONAL FORMULARY*

by JUSTIN L. POWERS

CHAIRMAN, COMMITTEE ON NATIONAL FORMULARY, AMERICAN PHARMACEUTICAL ASSOCIATION

EIGHTH N. F. REVISION REFLECTS BASIC CHANGES IN DRUG THERAPY ... DATA PRESENTED ON ADMISSIONS

FAR-REACHING changes in types of official drugs used have taken place during the past several years. Complex galenical preparations, and crude botanical and animal drugs have been supplanted by highly purified extractives and synthetics. With these changes, prescriptions calling for the combination of several drugs into a single preparation have gradually disappeared to be replaced by more simple forms of medication. These trends are unquestionably basically good and progressive, and the effectiveness of the newer drugs today makes the chance of rapid and complete recovery from illness much greater.

The changes in types of basic drugs and preparations during the past fifty or sixty years are reflected by the changes which have occurred in the content of the National Formulary and of the United States Pharmacopœia.

The general trends in types of drugs and certain preparations are presented graphically in Figures 1 to 4. These trends will be particularly noticeable in the new 1946, eighth edition of the National Formulary. During the revision program of the seventh edition of the National Formulary which has been official since November, 1942, 176 monographs were deleted. At the same time, approximately 100 drugs, previously unofficial, were tentatively admitted to N. F. VIII. Of this number, monographs including

* Adapted from a report in the *Bulletin of the National Formulary Committee*, 14: 121, 1946.

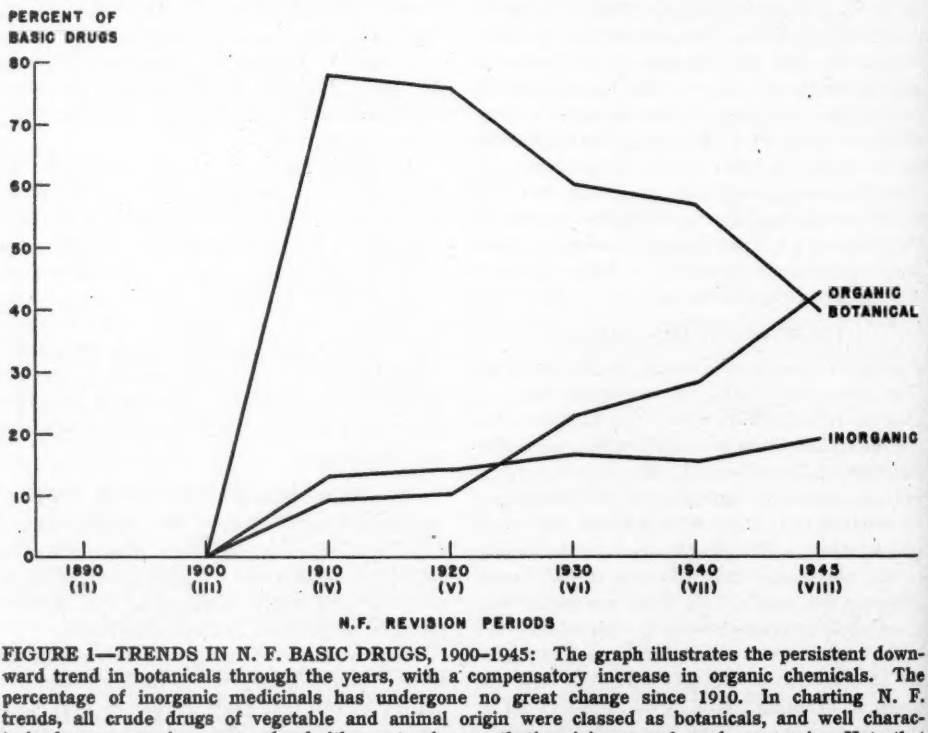


FIGURE 1—TRENDS IN N. F. BASIC DRUGS, 1900–1945: The graph illustrates the persistent downward trend in botanicals through the years, with a compensatory increase in organic chemicals. The percentage of inorganic medicinals has undergone no great change since 1910. In charting N. F. trends, all crude drugs of vegetable and animal origin were classed as botanicals, and well characterized, pure organic compounds of either natural or synthetic origin were classed as organic. Note that the graph indicates only basic drugs, and that prior to 1910 N. F. listings were, with few exceptions, only preparations.

official specifications have been developed for 82, which appear in the new edition.

Acting simultaneously with the Committee on National Formulary, the Subcommittee on Scope of the United States Pharmacopœia voted to discontinue standards in U. S. P. XIII for more than 100 U. S. P. drugs. The majority of these were adopted for inclusion in N. F. VIII because the Committee believed many of the drugs possessed varying degrees of therapeutic merit, and will continue to be used for some time in the future.

All new admissions to the National Formulary whether representing previously unofficial drugs or those from U. S. P. XII have been classified according to their actions and uses. No attempt will be made to discuss in detail each new admission, but reference may be made to one or more drugs in each of the several classifications. In the series of tables, the drugs marked with an asterisk are from U. S. P. XII.

Table I lists drugs acting on the gastrointestinal tract; parasympathetic drugs; and flavors, vehicles and pharmaceutical necessities. All of the drugs and preparations in these three classifications are well established and well known, requiring no particular comment or elucidation. It will be noted from Table I that for the first time, definite standards for Sippy Powders are officially recognized under appropriate names and with definite formulas and standards for strength, quality and purity.

JUSTIN L. POWERS, N. F. CHAIRMAN

Among the pharmaceutical necessities, the need for standards for Sherry Wine might be subject to question. Early editions of the National Formulary included a formula official under the name of Wine of Beef and Iron, but more popularly known as Beef, Iron and Wine. This formula was discontinued when the fifth edition of the National Formulary published in 1926 became official. It was replaced by a formula for an elixir of beef and iron containing no wine. This product never served as a satisfactory replacement for the original preparation. Accordingly, the Committee on National Formulary admitted to N. F. VIII a monograph for Beef, Iron and Wine patterned after the original N. F. formula, but with the quantity of ferric ammonium citrate increased from 10 Gm. per liter to 50 Gm. per liter. The new preparation will contain, in an average dose of 8 cc., 0.4 Gm. of ferric ammonium citrate. The new mono-

TABLE I—New Admissions to N. F. VIII

DRUGS ACTING ON GASTROINTESTINAL TRACT
Castor Oil Capsules
Magnesium Hydroxide
Magnesium Hydroxide Tablets
Magnesium Phosphate, Tribasic*
Magnesium Phosphate, Tribasic Tablets*
Mercury with Chalk*
Nux Vomica*
Nux Vomica Tincture*
Papain
Potassium Bitartrate*
Rhubarb Extract*
Sodium Bicarbonate and Calcium Carbonate Powder (Sippy No. 1)
Sodium Bicarbonate and Calcium Carbonate Tablets (Sippy No. 1)
Sodium Bicarbonate and Magnesium Oxide Powder (Sippy No. 2)
Sodium Bicarbonate and Magnesium Oxide Tablets (Sippy No. 2)
Sterculia Gum
PARASYMPATHETIC DRUGS
Belladonna Root*
Homatropine Methylbromide
Homatropine Methylbromide Tablets
Hyoscyamus Extract*
Stramonium Capsules
FLAVORS, VEHICLES AND PHARMACEUTICAL NECESSITIES
Almond Oil, Bitter*
Althea*
Anise Spirit*
Chloroform Water*
Eriodictyon*
Eriodictyon Fluidextract*
Honey*
Malt Extract*
Sherry Wine

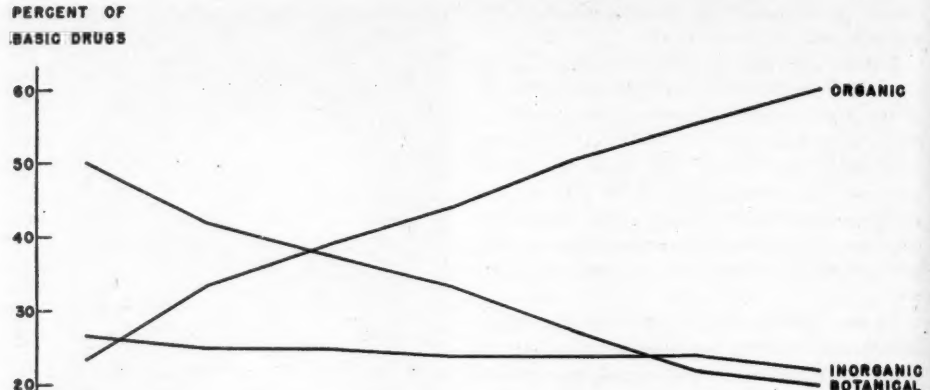


FIGURE 2—TRENDS IN U. S. P. BASIC DRUGS, 1890–1945: Although the basic trends in the U. S. P. became apparent earlier than in the N. F. (Fig. 1), there is an interesting parallel which reflects changing concepts of drug therapy. It is of significance to note how slight has been the fluctuation in the percentage of inorganic medicinals.

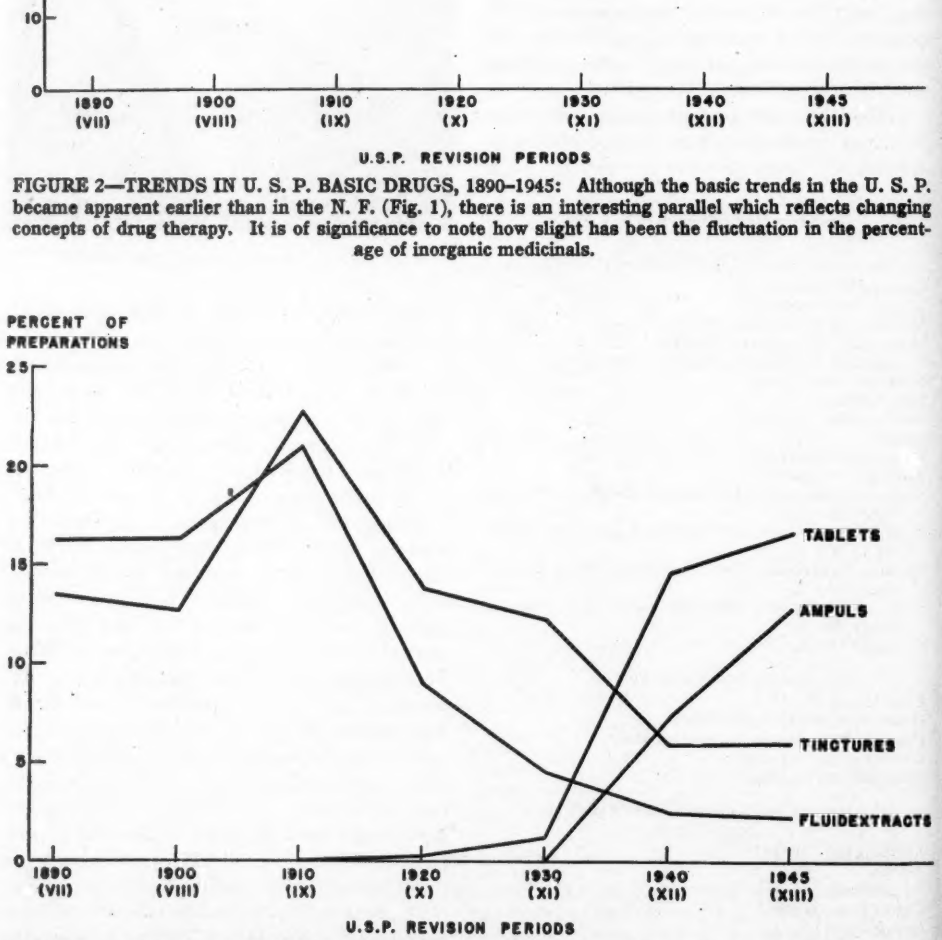


FIGURE 3—TRENDS IN SOME U. S. P. PREPARATIONS, 1890–1945: Here are shown the trends in selected groups of pharmaceutical preparations officially recognized by the Pharmacopœia. By 1910 the tinctures and fluidextracts had reached their peak, and then began a rather sharp decline. In U. S. P. XIII only 6% of all preparations will be tinctures and less than 3% fluidextracts.

graph also provides standards for strength not available in the original monograph.

In Table II is listed a number of antiseptics and germicides which are new to the National Formulary. Among these it will be noted that a monograph on Alcohol Rubbing Compound has been admitted to N. F. VIII. Although the enforcement of standards for this widely used product comes within the province of the Alcohol Tax Unit of the Bureau of Internal Revenue, it was believed by the Committee on National Formulary that official standards were desirable as a possible aid in maintaining standards of strength and quality.

Halazone and Succinchlorimide are both used for the disinfection of water. Suitable standards to insure the quality and strength of the chemicals and their tablets are included for the first time in any official book of drug standards.

It will be noted that three iodine preparations from the U. S. P. XII have been admitted to N. F. VIII. Two iodine tinctures are recognized in U. S. P. XII, one under the name Tincture of Iodine and containing 7% of iodine in a hydroalcoholic solution of potassium iodide, and the

TABLE II—New Admissions to N. F. VIII

Antiseptics and Germicides
Alcohol Rubbing Compound
Chloramine-T*
Dwarf Pine Needle Oil*
Halazone
Halazone Tablets
Iodine Ointment*
Iodine Solution*
Iodine Tincture, Strong*
Isopropyl Alcohol Rubbing Comp.
Mandelic Acid*
Mercuric Cyanide
Mercury Bichloride*
Mercury Bichloride, Large Poison Tablets*
Mercury Bichloride, Small Poison Tablets*
Nitromersol (Metaphen)
Nitromersol Solution
Nitromersol Tincture
Phenylmercuric Chloride
Phenylmercuric Nitrate
Pine Oil
Pine Oil Emulsion Concentrate
Proflavine Dihydrochloride
Proflavine Sulfate
Resorcinol Monoacetate
Silver Chloride, Colloidal
Silver Iodide, Colloidal (Neosilvol)
Silver, Strong Protein*
Succinchlorimide
Succinchlorimide Tablets
Thymol Iodide*
Trinitrophenol*

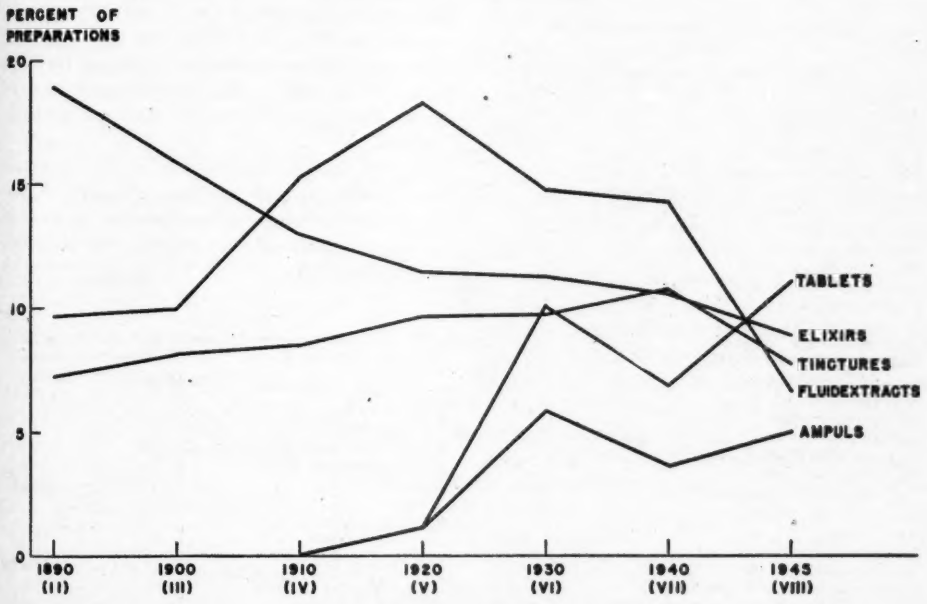


FIGURE 4—TRENDS IN SOME N. F. PREPARATIONS, 1890–1945: Although the demise of fluidextracts and tinctures is reflected in the N. F. as in the U. S. P. (Fig. 3), the change was not so precipitous since standards for some former U. S. P. products remained official for a time in the N. F. The pioneer work of the National Formulary in establishing official standards for ampuls is illustrated by the sharp increase in these preparations percentagewise in N. F. VI. A large number of the ampul monographs were later adopted by U. S. P. XII, which accounts for the sharp drop in preparations of this dosage form official in the following edition of the N. F.

other under the name Mild Tincture of Iodine containing 2% of iodine in a hydro-alcoholic solution of sodium iodide. The Tincture of Iodine containing 7% of iodine was not admitted to U. S. P. XIII but the monograph on Mild Tincture of Iodine was admitted under the title Iodine Tincture. It will be recalled that previous editions of the National Formulary, including N. F. VII, contained a monograph on a veterinary preparation under the name Stronger Tincture of Iodine. This preparation, according to authoritative opinions obtained from veterinarians, is no longer used. It was, accordingly, not admitted to N. F. VIII. The current U. S. P. Tincture of Iodine containing 7 per cent of iodine was admitted to N. F. VIII, however, under the name Strong Iodine Tincture. A note will be included in the monograph specifying that when Tincture of Iodine, U. S. P. XII is ordered, Strong Iodine Tincture is to be dispensed. It is hoped that no confusion will result from the new nomenclature of the two iodine tinctures.

The twelfth revision of the Pharmacopœia also included a 2% solution of iodine in a water solution of sodium iodide under the name Solution of Iodine, in addition to Lugol's Solution, with the title Strong Solution of Iodine. The 2% iodine solution was not admitted to U. S. P. XIII, but will be included in N. F. VIII. This preparation is claimed to be as effective as either of the iodine tinctures as a general antiseptic. If properly promoted, it is possible that it may become more widely used than at present.

Isopropyl Alcohol Rubbing Compound is also listed in the group of antiseptics and germicides. Adequate standards for this widely used product are included in N. F. VIII. Official monographs on Nitromersol and two of its preparations will be included in N. F. VIII. This organic mercury antiseptic was originally introduced under the registered trademarked name Metaphen, a name which, of course, will be retained by the original manufacturer.

Table III includes a list of parasiticides and anti-infectives, sera, and expectorants admitted to N. F. VIII. Several of these represent deletions from U. S. P. XII, but some are entirely new as far as official standards are concerned.

In admitting several of the U. S. P. XII deletions, it was recognized that some of them such as sulfapyridine, for example, are rapidly being supplanted by more desirable types of medication. It was believed desirable, however, to continue official standards for at least one revision period.

In the class of expectorants it will be noted that Terpin Hydrate has been admitted to the National Formulary. This was done because it is an ingredient of two widely used National Formulary elixirs.

TABLE III—New Admissions to N. F. VIII

PARASITICIDES AND ANTI-INFECTIVES
Acetarsone
Acetarsone Tablets
Carbarsone Tablets
Chaulmoogra Oil*
Ethyl Chaulmoograte*
Iodochlorohydroxyquinoline (Vioform)
Iodochlorohydroxyquinoline Tablets
Mercuric Salicylate*
Mercuric Salicylate Ampuls*
Mercuric Succinimide
Pamaquine Naphthoate (Plasmochin)*
Pyrethrum
Quinine Ethylcarbonate*
Quinine Sulfate Capsules
Sodium Cacodylate*
Sodium Propionate
Stibophen
Stibophen Ampuls
Sulfapyridine*
Sulfapyridine Sodium, Sterile*
Sulfapyridine Tablets*
Turpentine Oil Emulsion*
SERA
Antimeningococcic Serum*
Antipneumococcic Serum*
Human Measles Immune Serum*
Human Scarlet Fever Immune Serum*
EXPECTORANTS
Pine Tar Syrup*
Terpin Hydrate*
ANTIASTHMATICS
Ephedrine Sulfate and Phenobarbital Capsules*
Ephedrine Sulfate Capsules*
Potassium Nitrate*

TABLE IV—New Admissions to N. F. VIII

OINTMENT INGREDIENTS
Cetyl Alcohol
Dioctyl Sodium Sulfosuccinate
Glyceryl Monostearate
Hydroxystearin Sulfate
Oleyl Alcohol
Rosin*
Sodium Alginate
Suet, Prepared*
SOLVENTS, REAGENTS, ETC.
Acetic Acid*
Acetone*
Alcohol, Dehydrated*
Lactic Acid*
Nitric Acid*
Phosphoric Acid*
Phosphoric Acid, Diluted*
Propylene Glycol
Sulfuric Acid*
Sulfuric Acid, Diluted*

(Continued, next page)

(*Continued from preceding page*)

MISCELLANEOUS DERMATOLOGICAL PREPARATIONS
Cerate*
Methylrosaniline Chloride Jelly
Tar Oil, Rectified*
Rosin Cerate*
Sulfurated Potash*
Sun Cream, N. F.

ECBOLICS
Ergot*
Ergot, Prepared
Ergot Fluidextract

Table IV includes a number of ointment ingredients; solvents; miscellaneous dermatological preparations, and, in addition, Ergot, Prepared Ergot, and Ergot Fluidextract. No special comments or explanations concerning the admission of any of these drugs are necessary, with the possible exception of Ergot and its preparations which were admitted without assays. It is expected that a chemical method of assay will be developed for these drugs and become official before April 1, 1947, which is the date when all the provisions of N. F. VIII will become effective.

Table V lists amino acids, diagnostic agents, and miscellaneous preparations admitted to the National Formulary for the first time. Discussion of these admissions individually now is beyond the scope of this report.

TABLE V—New Admissions to N. F. VIII

AMINO ACIDS, DIAGNOSTIC AGENTS AND MISCELLANEOUS PREPARATIONS
Aminoacetic Acid*
Aminoacetic Acid Elixir
Camphor Spirit*
Ceylon Cinnamon
Gold and Sodium Thiosulfate
Histidine Monohydrochloride
Sodium Chloride and Dextrose Tablets
Sodium Chloride Tablets
Sodium Indigotindisulfonate
Sodium Indigotindisulfonate Ampuls

CIRCULATORY DRUGS
Barium Chloride
Barium Chloride Tablets
Glyceryl Trinitrate Spirit*
Strophanthin*
Strophanthin Ampuls*

DIURETICS
Juniper Oil*

Table VI shows the anthelmintics, central depressants, analgesics and antipyretics, and sources of calcium which will be included in N. F. VIII. Calcium Levulinate has been used as a source of calcium and it is claimed to possess advantages over some of the other calcium salts used for parenteral administration in that it can be used in higher concentrations and, because of its greater solubility, without the addition of stabilizing agents. Moreover, it is higher than Calcium Gluconate in calcium content. [For a detailed discussion of calcium compounds see page 443.—THE EDITOR]

TABLE VI—New Admissions to N. F. VIII

VERMIFUGES
Arecoline Hydrobromide Tablets
Carbon Tetrachloride*
Carbon Tetrachloride Capsules*
Chenopodium Oil*
Chenopodium Oil Capsules*
Pelletierine Tannate*
Santonin and Mild Mercurous Chloride Tablets
Santonin Tablets

CENTRAL DEPRESSANTS
Brandy*
Codeine*
Pentobarbital Elixir
Whisky*

ANALGESICS AND ANTIPYRETICS
Antipyrine*
Colchicum Seed*
Colchicum Seed Tincture*
Phenyl Salicylate*

SOURCES OF CALCIUM
Calcium Gluconate Tablets
Calcium Levulinate
Calcium Levulinate Ampuls
Calcium Phosphate, Tribasic*

Table VII includes hematopoietic drugs, local anesthetics, irritants, protectives, astringents and emollients. A number of familiar drugs and dosage forms are included in this table which heretofore have either been recognized by the United States Pharmacopœia or have been unofficial. Among these are such old familiar drugs and preparations as Ferrous Carbonate Pills, Reduced Iron, Turpentine Oil and Bismuth Subnitrate. Although Bismuth Subcarbonate appears to be the drug of choice, since there is some possibility of nitrite poisoning arising from the use of Bismuth Subnitrate due to its reduction in the gastrointestinal tract, the latter appears to continue to be used to a much greater extent than the former.

TABLE VII—New Admissions to N. F. VII

HEMATOPOIETIC DRUGS
Arsenious Acid Solution*
Ferric Ammonium Citrate, Green*
Ferric Cacodylate
Ferric Cacodylate Ampuls
Ferrous Carbonate Mass*
Ferrous Carbonate Pills*

(*Continued, next page*)

(*Continued from preceding page*)
Ferrous Carbonate, Saccharated, Capsules
Ferrous Gluconate
Ferrous Sulfate Syrup
Reduced Iron*
Reduced Iron Capsules*

IRRITANTS, PROTECTIVES, ASTRINGENTS AND EMOLLIENTS

Allyl Isothiocyanate*
Belladonna Plaster*
Bismuth Subnitrate*
Chalk Powder, Compound*
Coconut Oil
Linseed*
Linseed Oil*
Lycopodium*
Nutgall
Nutgall Ointment
Titanium Dioxide
Turpentine Oil*
Turpentine Oil, Rectified*
Zinc Acetate*
Zinc Chloride*

LOCAL ANESTHETICS

Benzyl Alcohol
Quinine and Urea Hydrochloride*
Eucaine Hydrochloride*

It is apparent from the trends in types of official drugs illustrated in the figures and the lists of drugs newly admitted to N. F. VIII shown in the foregoing tables, that the problems involved in establishing official drug standards are becoming more and more difficult with each revision of the National Formulary. A greater emphasis than in the past is now necessary upon chemical and biological tests and assays than upon macroscopic and microscopic descriptions, ash and extractive determinations for botanical drugs.

Some Style Changes in N. F. VIII

The most noticeable change in the style of N. F. VIII as compared with previous editions is the lesser prominence given to Latin titles and also the change in the arrangement of monographs. In the new edition the principal titles are in English and the Latin titles are placed in a secondary position previously occupied by English titles. It should be emphasized that this change does not mean the abandonment of a Latin system of nomenclature.

According to the plan which has been adopted, a drug such as Terpin Hydrate will be followed by Terpin Hydrate and Codeine Elixir and Terpin Hydrate Elixir. Under the Latin title arrangement Terpin Hydrate would have been among the "T's" and the Elixirs would have been among the "E's" with the titles, Elixir Terpini Hydratis et Codeinæ, and Elixir Terpini Hydratis. It is believed that the close proximity of basic drugs to their preparations presents an advantage in that it will bring together the tests and assays applying to both which previously have been widely separated.

In N. F. VIII greater emphasis than heretofore will be placed upon the use of the metric system in stating average doses. In order to clarify the interpretation of approximate apothecaries' equivalents of doses stated in the metric system, an explanatory statement and a table of approximate dose equivalents are included. This table and the explanatory statement have been adopted by the Council on Pharmacy and Chemistry of the American Medical Association for use in New and Nonofficial Remedies, by the Revision Committee of the United States Pharmacopœia and by the Committee on National Formulary.

———R———

TRANSLATION INTO SPANISH PLANNED FOR U. S. P. XIII

Translation of the forthcoming U. S. P. XIII has been authorized by the Board of Trustees of the Pharmacopœial Convention. The task will again be undertaken by Dr. A. A. Moll, assistant director of the Pan American Sanitary Bureau, who also supervised translation of both U. S. P. XI and XII.

The Spanish edition has been adopted as official in Costa Rica, Cuba, Dominican Republic, Nicaragua, Panama, Puerto Rico and the Philippines. It has been strongly recommended for adoption in several other countries, and was looked upon favorably by the Spanish pharmacopœial commission in Madrid. Demand for the Spanish edition has nearly doubled in the past few years, the U. S. P. office reports.

MINERAL OIL IN FOOD UNWISE

High prices and scarcity of edible vegetable oils have led to some use of mineral oil in food, particularly by restaurants. Occurrence of fecal incontinence due to ingestion of mineral oil where it has been substituted for edible oils has been reported.

The Council on Foods and Nutrition of the American Medical Association calls attention to the fact that "ingestion of liquid petrolatum is capable of interfering seriously with the absorption of carotene, vitamin D, calcium and phosphorus and vitamin K," and emphasizes that "its indiscriminate use in foods or in cooking is not in the interest of good nutrition . . ."

CALCIUM PREPARATIONS OF THE NF

FOURTH IN A SERIES ON DRUGS NEWLY ADMITTED TO THE NATIONAL FORMULARY

by MELVIN W. GREEN*

PHYSIOLOGICAL NEEDS FOR MINERAL ARE MANY BESIDES BONE FORMATION, BASIC INFORMATION PRESENTED ON CALCIUM METABOLISM AND THERAPY

CALCIUM constitutes a larger proportion of the body weight than any other mineral element, but its importance is frequently underestimated because of recent stress on the vitamins and proteins. Perhaps another reason calcium may be overlooked is the fact that about 99% of the calcium is in the bones and many people believe that bone is a static substance. This view is in error, however, because the bones are serving as a calcium reservoir and constantly giving up calcium to the other tissues as well as laying down fresh calcium as bone from the softer tissues.

The small percentage of calcium that is not associated with bone plays an exceedingly important role in the physiology of the heart, the autonomic nervous system and the blood-clotting mechanism. Since many pathologic conditions may be traced to calcium deficiency, calcium preparations have a decided place in modern therapy.

To determine in precise terms the exact need for calcium is not easy. This information is obtained by calcium balance studies analogous to nitrogen balance studies. Since calcium is eliminated from both the kidneys and the intestines, any balance experiments not taking into account both sites of excretion are of very little help. The calcium found in the feces is not all calcium that has not been assimilated, for some calcium is actually excreted into the bowel. This is proved by measuring the increased calcium in the bowel contents after the intravenous administration of calcium. The most precise studies would seem to indicate that the average adult needs 0.45 Gm. of calcium daily. The needs of growing children and pregnant and lactating women are nearly double this quantity, which in more familiar household terms is about a quart of milk a day. In the case of infants, change from milk to other foods is more apt to bring about a deficiency in calcium than any other dietary deficiency. This is important to recognize because normal development involves not only an increase of the amount of calcium but an increased percentage of body calcium during growth as well. In addition to the requirements of growth, the calcium must function to change a soft skeleton to a hard, bony one.

The absorption and excretion of calcium is influenced by many factors. Because of the insolubility of calcium salts in an alkaline medium, acidity in the intestinal tract promotes calcium absorption. Thus the upper portion of the intestine, which is more acid, absorbs most of the calcium. The presence of a large excess of fatty acids in the bowel also delays absorption due to the formation of insoluble calcium soaps. Diarrhea will naturally decrease absorption by rushing the contents through the intestinal tract too rapidly for effective assimilation. Of even greater importance is a positive vitamin D balance.

The calcium not assimilated as bone is all found in the extracellular fluids since none penetrates the cells. Serum normally contains about 10 mg. per 100 cc. (about 5 milliequivalents per liter). The state of this calcium is quite different from simple inorganic solutions, for the serum contains about three times as much calcium as can be held in simple solution at the *p*H of blood and in the presence of similar concentrations of phosphate and bicarbonate ions. Since part of this calcium is dialyzable and part is not, some of the calcium must be present in an unionized form, apparently largely as a proteinate. In addition some of the calcium is probably present as unionized soluble complexes.

Locally the calcium ion has very little action although some calcium salts, largely by virtue of the anion, are irritating. For example calcium

* Chief chemist, AMERICAN PHARMACEUTICAL ASSOCIATION Laboratory.

chloride injected into the subcutaneous tissues can cause considerable sloughing. Calcium levulinate or calcium gluconate has the advantage in intravenous medication because of the lack of such an irritating quality.

While an excess of calcium has little effect on the nervous system, a deficiency causes a marked disturbance resulting in a low-calcium tetany. This is characterized by a spasm of the throat muscles, toes and wrists, and by convulsions. Smooth muscles of the bronchi, eye, gastrointestinal tract and bladder may be thrown into spasm also and even the cardiac muscle may be sufficiently affected to cause arrhythmia.

When calcium is injected intravenously, as it reaches toxic levels a gradual slowing of the heart occurs until at a blood level of 60 mg. per 100 cc. death occurs (dogs) from stoppage of the heart. The cardiac effect of calcium in some ways resembles digitalis, and in fact an increase in the toxicity of digitalis has been reported when the calcium level is too high.

Calcium salts have been given for edema and inflammation where they are said to decrease capillary permeability. The results are so erratic that it is questionable whether it is worth the trouble of calcium medication, however.

While the calcium ion is an essential link in the conversion of prothrombin to thrombin in the clotting of blood, it is very doubtful whether a calcium deficiency is ever responsible for a prolonged bleeding time.

In 1939, Danforth and Ivy showed that the uterus, like the heart, is very sensitive to calcium ions. When the calcium ion concentration in the blood was low, the uterus failed to respond to oxytocic drugs and, conversely, the oxytocic action of drugs could be potentiated by calcium. These workers point out that the administration of alkalinizing agents to reduce the calcium ion concentration may be effective in diminishing hyperirritability of the uterus in cases of threatened abortion and in relieving cases of uterine spasm.

New Admissions

Three calcium preparations have been newly admitted to the National Formulary in the eighth edition: calcium levulinate, calcium levulinate ampuls, and calcium gluconate tablets.

Calcium levulinate is a nonirritating salt of calcium which is very soluble in water so that, although the salt contains a moderate percentage of calcium, the calcium content of injectable solutions may be made quite high. This is especially advantageous in veterinary practice where frequently large amounts of calcium must be given. Cox, Dodds and Casper found it possible to dissolve 34 Gm. of calcium levulinate in enough water to make 100 Gm. of finished solution corresponding to approximately 50% by weight-volume.

Stability

Calcium gluconate for injection must be stabilized to maintain a clear solution. Calcium levulinate possesses the advantage of not requiring a stabilizer. In fact, calcium levulinate is often used as the stabilizer in calcium gluconate ampuls.

The table shown below gives the approximate percentage of calcium in the official compounds of calcium, the approximate solubility in water at room temperature, and the average dose.

OFFICIAL COMPOUNDS OF CALCIUM

Compound	Approximate Per Cent Calcium	Approximate Solubility in Water	Dose, Gm.
Carbonate	40	Insol.	1.0
Chloride	27	1 in 1.2 cc.	1.0*
Gluconate	9	1 in 30 cc.	5.0
Glycerophosphate	19	1 in 50 cc.	0.3
Hydroxide	54	1 in 630 cc.	0.02*
Hypophosphite	23	1 in 6.5 cc.	0.5
Lactate	13	1 in 20 cc.	1.0
Levulinate	13	1 in 2	1.0*
Phosphate, dibasic	23	Insoluble	1.0
Phosphate, tribasic	13	Insoluble	1.0

* Dose based on official preparation.

Previous papers in this series on products newly admitted to the National Formulary have appeared as follows: Antiseptic Mercury Compounds, March, 1946, p. 132; Acetarsone, Carbarsone and Iodochlorohydroxyquinoline, April, 1946, p. 150; Some Pharmaceutical Necessities, July, 1946, p. 297. See, also, Iron Salts, February, 1946, p. 56; Sun Tan Ointment, July, 1945, p. 181.

BAL

NEW ANTIDOTAL TREATMENT FOR ARSENIC POISONING NOW READILY AVAILABLE, EVIDENCE INDICATES USE OF DRUG MAY HELP REDUCE TOXIC EFFECT OF OTHER METALS

BAL, a new product for use in the treatment of arsenic and mercury poisoning has become available for civilian medical use.* Discovery of the anti-arsenical properties of BAL was hailed as one of the outstanding wartime achievements in the field of chemical warfare. The first report on this important drug came from Prof. R. A. Peters of Oxford University and his co-workers, who discovered the therapeutic value of BAL. As the name BAL (British anti-lewisite) suggests, the drug was intended as an antidote for local and systemic toxic effects of certain arsenical war gases. Chemically, it is 2,3-dimercaptopropanol.

Early work showed that experimental animals usually died within twenty-four hours following application of lethal amounts of lewisite to the skin, but that they almost invariably recovered when BAL was applied to the treated area within two hours. Information on the chemistry, method of preparation and basic biochemical characteristics of BAL was transmitted to the United States early in the war through the British government, and a supply of BAL itself was received in this country late in 1941.

An intensive study of the drug and its properties was at once undertaken by various government agencies. The United States Army and Navy, the Office of Scientific Research and Development, the National Research Council and the Federal Security Agency all cooperated in the program. At the same time further studies were being made in Great Britain and in Canada. Many related compounds were prepared and tested, but of the whole series BAL gave the most favorable results.

Because of its great importance to the armed forces BAL and the preparations made from it were produced under "secret" classification. All data relating to the drug, its uses and method of preparation were guarded with the greatest care. This information is now becoming available, and only in the past few months have ampuls been released for civilian medical use.

The development of BAL began with the observation that the drug, applied as a solution or ointment, counteracted local and to a considerable extent systemic effects of applications of toxic arsenical compounds to the skin. These experiments led directly to further studies in animals of the toxicity and therapeutic effects of BAL in various vehicles and by various methods of administration. A detailed investigation of dosage was also undertaken, at first on animals and later on human volunteers.

From the information assembled in this way formulas were developed for topical application as well as for a solution to be injected intramuscularly. BAL is not an innocuous drug, but fortunately dilutions that are therapeutically effective may be used with no lasting ill effects. During the war, preparations were made for topical application to the eyes and skin to overcome local reactions in case poisonous arsenical gases were used. But of chief interest to civilians is the solution used by injection in cases of systemic poisoning.

The most effective solution for injection, developed by Dr. Harry Eagle of the U. S. Public Health Service and his collaborators, proved to be a 10% solution of BAL in peanut oil containing 20 % benzyl benzoate. This solution was first tested on animals, then on human subjects, and was finally given a clinical trial.

Since toxic reactions are occasionally observed in patients receiving arsenotherapy for syphilis, a carefully supervised study of these cases was made. As a result more than 200 case histories of various types of arsenical poisoning treated with BAL were assembled. Most of the toxic reactions treated consisted of arsenical dermatitis or hemorrhagic encephalitis occurring as a result of treatments for syphilis. Only seriously ill patients were treated with BAL at first and they, of course, received the usual supportive treatment. In spite of the difficulties of making an exact estimate of the value of a drug under such conditions, the data obtained supported the results secured on animals.

After the therapeutic value of BAL became es-

* Supplied by Hynson, Westcott & Dunning, Inc., Charles and Chase Sts., Baltimore 1, Md.

tablished, the Hynson, Westcott & Dunning laboratory was requested to cooperate in developing the ampul product. Because of urgent need for the drug, manufacturing was undertaken while the new plant was being organized.

Meanwhile, work on animals indicates that BAL also may be of use in treating poisoning by other metals such as cadmium, zinc and mercury. Although its value in poisoning due to metals other than arsenic is not yet definite, a recent report by the Council on Pharmacy and Chemistry of the American Medical Association stated that BAL had been used with promising results in mercury poisoning [*J. Am. Med. Assoc.*, 131: 824, 1946]. It should be emphasized, however, that successful treatment of arsenic and mercury poisoning depends on beginning the course of injections at the earliest possible moment, use of adequate dosage, and the proper supportive measures. The possible value of BAL in gold poisoning is also under investigation.

As to the mechanism of action of BAL, wartime studies showed that arsenic and mercury combine with certain chemical groupings in the body cells (specifically the -SH groups) and prevent their proper functioning. BAL has a greater chemical affinity than the cells for the heavy metals and apparently removes the metal from the cell by forming a metal-BAL compound. The effect of this is that arsenic, for example, is removed from the cells, forms a stable combination with BAL and is rapidly eliminated from the body. It has been shown that the arsenic content of the urine in these cases rises rapidly after administration of BAL.

BAL is unstable in aqueous solution and must be administered intramuscularly in oil solution. Benzyl benzoate is added because the drug is more soluble in the mixture than in peanut oil alone.

The recommended dose per injection is adjusted to body weight on the basis of 2.5 mg. per Kg., or 0.025 cc. of the solution per Kg. In a man weighing 165 pounds the unit dose per injection is 1.8 cc. This dose is repeated at four-hour intervals for a total of 4 to 6 injections on each of the first two days. The dosage may then be reduced to 2 injections daily for a total of ten days or until the patient recovers completely.

Larger doses of BAL seem necessary in cases of mercury poisoning. An initial dose of 5 mg. per Kg. is followed in one or two hours by a dose of 2.5 mg. per Kg. The smaller dose is repeated two to four hours later and in severe cases a third 2.5 mg. per Kg. dose is given within the first twelve hours of therapy. Two 2.5 mg. per Kg. doses may be given on the second day and one on the third.

PHYSOSTIGMINE FOR RHEUMATOID ARTHRITIS

PHYSOSTIGMINE salicylate has been put to a new use by three physicians who find that it is effective in relieving muscle spasms and some of the pain in rheumatoid arthritis.

Drs. Abraham Cohen, Philip Trommer and Joel Goldman (*J. Am. Med. Assoc.*, 130: 265, 1946) reject their previous recommendation of neostigmine, a drug successfully used in treating muscle spasm in poliomyelitis. Physostigmine was selected for study because it is closely related in action to the former drug.

The authors conducted their study in the special arthritis wards of the Philadelphia General Hospital. From their observations they conclude that physostigmine is successful in giving immediate relief from muscle spasms and for preventing deformities and, moreover, it is an inexpensive form of treatment.

In addition the authors found that there were fewer undesirable reactions with physostigmine than with neostigmine. They say: "The lesser frequency of complaints with physostigmine made for better patient cooperation. . . . It is because of this and for reasons aforementioned that we have substituted physostigmine for neostigmine in all our studies. As will be noted, physostigmine bears out our original premise in respect to clinical improvement. It relieves muscle spasm and therefore relieves pain in many instances. The relief is common to a large portion of cases and is frequently encountered within fifteen to thirty minutes after injection."

The usual procedure was to give 0.6 mg. each of physostigmine and atropine sulfate simultaneously. If no relaxation of muscle was obtainable with this dose, physostigmine was increased to 1.2 mg. The atropine eliminates unpleasant parasympathetic side effects of physostigmine. The dosage of either atropine or physostigmine was carefully adjusted depending on the reaction.

William Levin, chief pharmacist at Philadelphia General Hospital, is credited by the physicians with assistance in the early part of the experiments.

MEMORIAL HONORS PHARMACISTS WHO SERVED FLAG

See Front Cover

ARCHITECTURAL designs are now completed for the flagstaff at the AMERICAN PHARMACEUTICAL ASSOCIATION building which will be dedicated to pharmacists who have served the flag. An artist's conception of this national memorial is shown on the front cover.

In a beautifully landscaped setting, the flagstaff rises to a commanding height at the left of the entrance to A. PH. A. headquarters. Symbolic of pharmacists' service in time of war, and their continuing contribution to peacetime living, the sturdy bronze staff will hold aloft the American flag. Around the rugged marble and granite base will be a marble bench bearing an appropriate inscription.

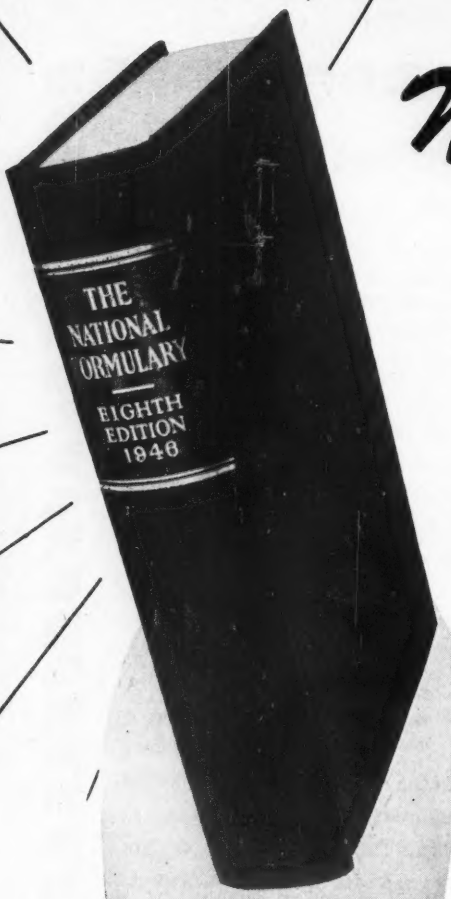
This fitting memorial has been made possible by a gift to the ASSOCIATION from one of its life members, and a veteran of the Spanish-American war, Dr. H. A. B. Dunning of Baltimore. Dr. Dunning is a past president of the AMERICAN PHARMACEUTICAL ASSOCIATION, currently a member of the Council, and has long been active in A. PH. A. affairs. His vision and great interest in the ASSOCIATION'S program have been largely responsible for such projects as construction of the headquarters building in Washington, D. C., and establishment of the *Practical Pharmacy Edition* of THIS JOURNAL. He is widely known for his works as a pharmaceutical scientist, philanthropist and patron of scientific research and development.

Plans for the memorial were first announced at the 1946 meeting of the ASSOCIATION in Pittsburgh. In his convention address President George A. Moulton referred to Dr. Dunning's contribution as another demonstration of "his keen interest in the future of American pharmacy and his abiding faith in the AMERICAN PHARMACEUTICAL ASSOCIATION as the instrumentality for effective leadership."

The memorial flagstaff will not only honor the some 15,000 pharmacists who served in World War II, but also those who fought to gain and preserve the nation's liberties down through the decades.

Since the time of Apothecary-General Hugh Mercer, who died on a Revolutionary battlefield, the profession has played an important role in the medical department of the Army and the fighting forces: in the War of 1812, the War Between the States, the Spanish-American War, and World Wars I and II. In bronze and stone, and in the red, white and blue, these pharmacists will be permanently remembered in the nation's capital.

N. F. VIII.



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THE PHARMACEUTICAL SURVEY: ANSWERS VERSUS THE QUESTIONS*

by EDWARD C. ELLIOTT

AMERICAN COUNCIL ON EDUCATION, DIRECTOR OF THE PHARMACEUTICAL SURVEY

MY present assignment has to do with "The Pharmaceutical Survey." When this enterprise first became known to me, it had various names: A Survey of Pharmaceutical Education in the United States; A Survey of Pharmacy; A Study of Pharmacy and Pharmaceutical Practices in the United States; A Survey of Pharmaceutical Education, Practices, and Services. An examination of the indicated purposes of the Survey finally led to the adoption of the title, "The Pharmaceutical Survey." This, at least, had the advantage of brevity for talk, telephone and typewriter. The requisition for my appearance on this program, presented by your energetic and energizing Secretary, demands an effort to translate the title into the terms of the planned program of action.

The opportunity to discuss the goals and the methods of the Survey before the members of this key ASSOCIATION of the profession of pharmacy is a bit of good fortune for me, and perchance, for you also. The stake in the outcomes of this constructive study of pharmacy is not small. Consequently, you are entitled to share in the intentions, the methods, and the expectations of the Survey.

My own professional activities as a university president for more than thirty years have included the administrative oversight of, and general responsibility for, a school of pharmacy. When I assumed my present post, I was, therefore, not wholly unfamiliar with the continuing problems of the professional training and education centering in such schools. At the same time, I was fully aware that I was undertaking the new task with not a few of the disadvantages of ignorance. Here I was, an individual with a certain background of scientific and educational experience, commissioned to place pharmaceutical education under the microscope; and in the light of 1946, to describe, with accuracy and disinterest, what he was able to see. With the assistance of a committee, representing the leadership of the various practical activities belonging to the domain of pharmacy, an attempt would be made to interpret the assembled facts as related to, and as determining the functioning of, the colleges and schools of pharmacy.

As one studies the development of American pharmacy, particularly during the past half century, he cannot fail to be impressed by the never-ending activity and display of power of the profession for the more complete realization of its high ideals. The far-reaching accomplishments make a dramatic chapter in the record of the development of American life. To no small degree, the American standard of living is to the credit of pharmacy; pharmacy acting through its individual leaders, and through its local, state, and national organizations. Would that each American were disposed to see in the familiar corner drugstore of today, not merely an emporium for his material convenience, but an all-important agency created through the labors of idealistic, practical, unselfish servants in the house of civilization for the preservation and welfare of that house. And to know, furthermore, that the going through the years has been tough going.

The Pharmaceutical Survey, therefore, is not something entirely new. It is but another step in the forward movement of the profession in its crusade for the protection and the promotion of American well-being. Not a small share of the credit for the taking of this step belongs to the leadership of the organized professional schools and colleges for the training of pharmacists, and especially to the American Foundation for Pharmaceutical Education for making available the necessary funds.

Of Science, Business and Life

From the limited vantage point of the present moment, the broad, inclusive purpose of the Survey is to assemble, as far as may be possible with the means and resources available, those facts of education, of science, of business, and of life that must be taken into account by those preparing men and women for the skillful and effective performance of the duties belonging to the profession of pharmacy.

Before it is completed, it is expected that the Survey will be able to point out the ways and

* Presented at the 1946 meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, Pittsburgh, Pa.

means for the constructive utilization of these facts. In other words, there should result a prescription for the better health of pharmacy as this is determined by its trained practitioners. The effective, widespread implementation of the facts developed may be a test of the inward strength and the outward vision of the profession of pharmacy.

Some Purposes

One of the early sketches for the then proposed Survey contained the following listing of purposes.

1. To determine what pharmacists do in practice.
2. To determine what the pharmacist should know in order to perform his specified duties.
3. To determine what the colleges should teach in order to fit pharmacists for the work they are expected to do.
4. To determine what the pharmacist is expected to do, what he must know, and what the colleges must teach in reference to the several types of positions in industry, government service, Army, Navy, etc.
5. To determine trends which may indicate what pharmacists will do in the future.
6. To determine the economic status of pharmacists.

While this list was expanded for the making of the first ground plan of the Survey, it centers attention upon the main intention of the Survey: to be sure that pharmaceutical education was not being conducted in an academic vacuum and did not disregard the hard realities of the world of which it was a part.

The document which is to be considered as the charter of The Pharmaceutical Survey, and which is the result of the joint activity of the American Association of Colleges of Pharmacy, the American Foundation for Pharmaceutical Education, and the American Council on Education, contains the following general statements of purpose and list of specific undertakings:

"Because of the important role that pharmacy plays in American life, because pharmaceutical services are constantly being expanded, and because pharmaceutical education has expanded until there are at present approximately 65 schools of pharmacy in the country, it is important that a study be made of pharmacy and pharmaceutical services to include some or all of the following areas:

"1. An analysis of prescriptions to determine the knowledge required in compounding them.

"2. A study of the activities engaged in by pharmacists.

"3. An analysis of the general knowledge that a pharmacist should have regarding pharmaceutical products as indicated by information requested by members of the medical profession and questions asked by customers.

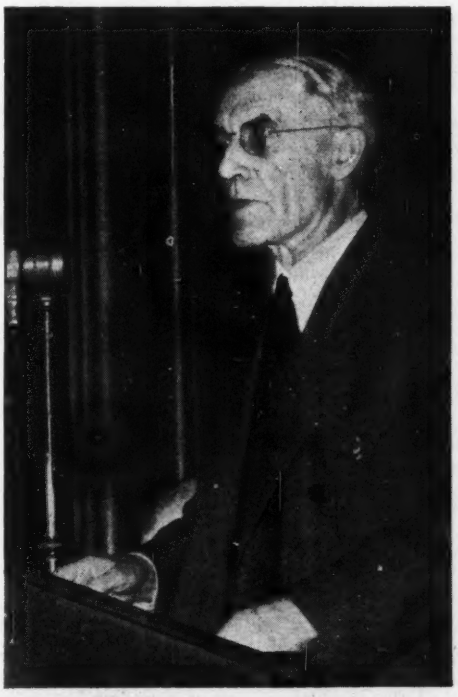
"4. A study of new fields of pharmaceutical service with their implications both for training and for employment.

"5. A study of the role of pharmacy in medical care.

"6. An evaluation by pharmacy graduates of their previous training in relation to activities in which they engage.

"7. A study of supply and demand of trained personnel in the field of pharmacy.

"8. The relationship of pharmaceutical education to business and industry—how the education can be more closely integrated with practical experience.



PHARMACEUTICAL SURVEY DIRECTOR, Edward C. Elliott, of the American Council on Education, addresses A. Ph. A. members at Pittsburgh Convention on the nation-wide study of the profession just inaugurated.

"**9.** Provisions for the guidance of pharmaceutical students within the pharmaceutical colleges.

"**10.** The establishment of criteria for the selection of pharmacy students.

"**11.** The qualifications of faculty members and the conditions of faculty service in the pharmaceutical colleges.

"**12.** The levels of educational preparation required in pharmaceutical services.

"**13.** The relationship of requirements for licenses to programs in pharmaceutical education."

Fact Finding Under Way

The Survey is now in the first stage of its fact-finding operations. The most that can be said now is an inadequate account of the first of these operations. With the approval of the National Committee first attention is being given to an examination of quality of the student material in the accredited colleges and schools of pharmacy—the raw human stuff for the substance of the profession in the years ahead. This involves the application of a series of student prediction and achievement tests.

Next in line for consideration is the analysis of present-day prescriptions to determine the technical knowledge required for their compounding and filling. It has been urged by those who claim to know that this analysis should include not less than 50,000 prescriptions, selected in such a way as to be truly representative of the nation's prescription practices. In any event, the Survey will utilize the best of modern sampling techniques, beginning with a first thousand prescriptions and increasing the number until the statistical distributions tend to be stabilized. We shall try, in this bulky job, to make the head save the heels and the hands.

A base plan has been prepared for the study of the actual daily activities of the pharmacist on the job. These facts of this job and time analysis may be considered as having a critical significance for the creation of an effective working relation between training and the tasks of the job. Perhaps this study will provide data for understanding the nature of the gap between the technical artistry of compounding prescriptions and the troublesome art of pounding the cash register for profits. Here one may surmise, but not promise.

In passing, it may be noted that I intend personally to visit and to study at first hand as many of the colleges and schools of pharmacy as time and money permit. Representative pharmaceutical manufacturing establishments and research laboratories, as well as hospitals, will be included within the range of observation. The Survey is to be a ground operation; and not an affair of attic speculation.

One thing is already crystal-clear: The ultimate success of the enterprise will depend upon the extent and degree to which it will be enabled to enlist the complete cooperation of all of those groups that have a vested interest in pharmacy—trainers, manufacturers, wholesalers, retailers, detailers, and finally the consumers.

Not a small part of my own self-training for the present tasks has consisted of the reading of hundreds and hundreds of pages of addresses, reports, and editorials relating to the status and problems of pharmacy. The first impression was that pharmacy was suffering from the malady of professional frustration; that the profession, in our American world, had become so entangled in the meshes of commerce that it had begun to feel that it had lost much of its time-honored standing. How often during this long examination of the printed records have I come across the phrase, "Pharmacy is an ancient profession." Fortunately this has not unduly impressed me.

With Energy and Optimism

The Pharmaceutical Survey is going about its indicated purpose with energy and optimism, and with a firm conviction that pharmacy must not rely upon its well-preserved antiquity to maintain itself in the world. We are dealing with the needs and opportunities of the new profession of pharmacy.

It is encouraging to read in a recent report of the American Council on Pharmaceutical Education the wise observation of its wise secretary, Dean DuMez:

"All of us realize that the practice of pharmacy has changed within the past several decades and that there is little or no probability of its returning to its former pattern .... It is time the colleges of pharmacy ceased to bemoan the fact that the modern pharmacist no longer performs certain professional services . . . , to accept with good grace the change which has taken place and to make provision in the pharmaceutical curriculum to meet it."

The Survey has begun its work with confidence that the key facts indicated in the base blueprint will be obtained. On the other hand, the significance of these facts is the real problem. As the

great scientific thinker of the last century once said, "Those who refuse to go beyond fact rarely get as far as fact."

For the processing of the accumulated facts the Survey will rely upon the combined wisdom and vision of the Committee designated for the general oversight of the enterprise. The AMERICAN PHARMACEUTICAL ASSOCIATION will, it is certain, have confidence in such men as: George D. Beal, assistant director, Mellon Institute; W. Paul Briggs, Veterans Administration; W. W. Charters, director, The Research Service, Stephens College; B. V. Christensen, dean, College of Pharmacy, Ohio State University; Donald A. Clarke, apothecary-in-chief, The Society of the New York Hospital; George V. Doerr, first vice-president, McKesson and Robbins, Inc.; A. G. DuMez, dean, School of Pharmacy, University of Maryland; Carson P. Frailey, executive vice-president, American Drug Manufacturers Association; H. Evert Kendig, dean, School of Pharmacy, Temple University; Frank W. Moudry, secretary, Minnesota State Board of Pharmacy; Edward S. Rogers, chairman of the Board, Sterling Drug, Inc.; Robert L. Swain, editor, *Drug Topics;* Frank O. Taylor, Parke, Davis & Co.; John A. Stevenson, president, The Penn Mutual Life Insurance Co.; Charles R. Walgreen, Jr., president, Walgreen Drug Co.

It may be safely forecast that the distinctive function of the Survey is that of stimulating the development of a broad educational philosophy for pharmacy; a philosophy which, in action, will grip the spirit of those who aspire for a career of high human service.

Finding the Question

In one of the few of his poems that I am able to understand, Archibald MacLeish has expressed a thought which is constantly in my mind these early days of the Survey:

> We have learned the answers, all the answers
> It is the *question* we do not know
> We are not wise. We have a way of saying
> What's the meaning of life? No one has answered us.

Will you permit a few examples of what I mean by the questions that have not yet been put? These are referred to as proof that the Survey maintains an open mind. We know we may not intentionally neglect any of the forces tending to distort or to diminish the plan and power of the profession.

1. *Is the future status of the profession of pharmacy to be determined by the educational institutions or by forces outside of these institutions?*

2. *Is pharmacy a true profession?* Or is it to be placed in another classification of human activities? One of my advisers has put the problem in a different form when he asks, "Is it possible for a true profession to be practiced over a counter?"

3. *Is the practice of pharmacy helped or handicapped in the modern environment of high-pressure advertisement and distribution?*

4. *Is the prevailing code of the ethics of pharmacy fitted for the realities of the world in which it is to be applied?*

5. *Has the time arrived when the profession of pharmacy and of medicine should reexamine and re-state their relations and mutual responsibilities?*

6. *Is the profession of pharmacy receiving its rightful share of the limited supply of youth of superior ability and ambition?*

7. *What is to be the probable effect of the growing movement for the so-called unionization of pharmacists?* Will this contribute to the competency, the dignity and public standing of the new generation of the ancient profession?

"The Squared Circle"

On my desk in Washington there is a large sheet headed "The Squared Circle." Below this heading there is a four-cornered figure. If we were looking at this together, we would see a word written at each corner. These four words are Politics, Profits, Profession, and Public. In the center of the square is the word Pharmacy. This design symbolizes the fourfold complexity of the problem of the Survey. Pharmacy is under the necessity of maintaining high scientific and personal standards for its practitioners. Pharmacy operates within the framework of legal controls imposed by state and national governments. Under our system of free enterprise the element of material profits may not be glossed over. Finally, as a recognized member of the group of health professions, people and their welfare must always be the center of concern.

Recognizing fully the difficulties of the problem The Pharmaceutical Survey has committed itself to the cause of the profession of pharmacy—the profession at once free and consecrated to the service of the health and well-being of men and the children of men.

PRESCRIPTION Information SERVICE

SUBMIT YOUR PROFESSIONAL PROBLEMS TO THIS JOURNAL, 2215 CONSTITUTION AVE., WASHINGTON 7, D. C., GIVING ALL PERTINENT DETAILS. SERVICE TO READERS IS PROVIDED BY THE A.PH.A. LIBRARY AND TECHNICAL STAFF AND THE FOLLOWING CONSULTING BOARD OF PHARMACEUTICAL SPECIALISTS:

MAISON DE NAVARRE
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ADLEY B. NICHOLS
GEORGE C. SCHICKS
GEORGE L. WEBSTER
LEROY WEIDLE
ELMER H. WIRTH
LOUIS C. ZOPF

GENTIAN VIOLET JELLY

I notice that methylrosaniline chloride jelly will be official. Will you please send me the formula?

Also, do you know through which concern I could purchase an electrical high-speed stirrer suitable for prescription compounding of suspensions and emulsions.—D. S., New Jersey

Methylrosaniline chloride jelly, a new admission to the *National Formulary*, has the following formula:

Methylrosaniline chloride....	10	Gm.
Glycerin.....	150	Gm.
Exsiccated sodium phosphate	4.3	Gm.
Tragacanth.....	15	Gm.
Eugenol.....	0.3	cc.
Eucalyptol.....	0.3	cc.
Methyl parahydroxybenzoate.....	0.26	Gm.
Propyl parahydroxybenzoate	0.14	Gm.
Distilled water, a sufficient quantity,		
To make.....	1000	Gm.

Dissolve the methylrosaniline chloride, exsiccated sodium phosphate, methyl parahydroxybenzoate and propyl parahydroxybenzoate in about 700 cc. of distilled water. Add the glycerin, tragacanth, eugenol, eucalyptol and sufficient distilled water to make 1000 Gm. Mix well, and keep in a closed container for one week with occasional mixing or agitation and then strain through light muslin.

Storage—preserve methylrosaniline chloride jelly in tight containers, preferably in collapsible dispensing tubes.

A motor-driven stirrer suitable for use in prescription work may be purchased from such firms as the American Instrument Company, 8010 Georgia Avenue, Silver Spring, Md.; and the Colloid Equipment Company, 50 Church Street, New York, N. Y. In writing suppliers be certain to mention the types of work you will expect the stirrer to do, and especially the average volume to be handled at a time.

STABILITY OF CITRATE SOLUTION

We have difficulty in getting a stable solution of magnesium citrate. The U. S. P. formula has been adjusted to use proportionate amounts of magnesium carbonate according to the MgO content. We follow the U. S. P. method but a slight sediment appears after a month or so. How can we remedy this situation?—J. M., Mass.

Difficulty has been experienced with the stability of solution of magnesium citrate due to a number of factors. You are apparently avoiding one common source of trouble by adjusting the magnesium carbonate content on the basis of an assay of the carbonate. This is an important point, for one can prepare a solution so as to maintain a high acid value necessary for stabilization. According to data submitted, the amount of

carbonate used comes as close to the minimum as can be safely employed.

It would be well to check the quality of your distilled water. A number of firms have had difficulty when the still was not functioning properly or where they were not securing official distilled water.

Does your solution assay properly both for magnesium oxide and for minimum total citric acid? It would also be well to check your purified talc for soluble substances. Apparently there has been some difficulty in obtaining talc in recent times which is comparable to that previously obtained.

PROPYL THIOURACIL

We are receiving inquiries for a preparation called "propyl thiouracil" from a local physician. Please advise us if you have any information on this product.—J. W., New Brunswick

We understand that propyl thiouracil is currently available only for experimental use. It is hoped that this form of thiouracil will have a considerably lower toxicity, particularly in regard to the incidence of granulocytopenia, than thiouracil itself.

Complete information concerning the thiouracil now on the market will be found in the December, 1945, and February, 1946, issues of THIS JOURNAL.

ASPIRIN SOLUTION UNDESIRABLE

Please advise me the best way to fill the following prescription:

Sodium phenobarbital..... *gr viii*
Ac. acetylsalicylic
Sodium salicylate, aa..... ℥ *ii*
Elix. lact. pepsin, q.s.ad..... ℥ *vi*
—C. W., North Carolina

The main difficulty is due to acidity of the aspirin and lactic acid in the vehicle. This combines to precipitate phenobarbital and salicylic acid, and there is not sufficient alcohol in the vehicle to hold these drugs in solution. Furthermore, the prescribing of aspirin in solution is generally to be discouraged because aspirin is not stable under such conditions and rather rapidly breaks down into salicylic acid and acetic acid.

If the physician insists on prescribing these drugs together, we would suggest that you use the corresponding amount of phenobarbital, in place of sodium phenobarbital, and get the physician's permission to use isoalcoholic elixir N. F. as a vehicle. In using the isoalcoholic elixir, about two-thirds of the total amount of solvent should be the high alcohol elixir and the remainder the low alcoholic elixir.

This will give a total alcohol content between 30% and 40% and will be sufficient to keep everything in solution. Bear in mind, however, that this does not prevent hydrolysis of the aspirin.

EMULSIFICATION NECESSARY

We are having trouble compounding the following prescription:

Novocaine solution, 1%..... ℥ *ss*
Chloretone inhalant, q. s..... ℥ *i*
M. sol.
Sig.—Use as nose spray, t.i.d.

Kindly advise your method of dispensing.—S. K., Maryland

We assume that the "trouble" in compounding novocaine solution with chloretone inhalant refers to the fact that oil and water do not mix.

If your physician insists on adding novocaine solution to the chloretone inhalant, which contains liquid petrolatum as the solvent, the only suggestion that we have is one of emulsification. The best emulsifying agent and procedure would be to use Pharmagel A with the necessary amount of tartaric acid, making the emulsion with the use of a hand homogenizer, as indicated on page 30 of the First Bound Supplement to the U. S. P. XII. In the absence of a hand homogenizer, some emulsifying agent other than gelatin would have to be used.

Gelatin would be highly superior because of the quality of the finished emulsion and the fact that the emulsion would not be thickened materially as it usually is when other emulsifying agents are used.

CALCIUM GLUCONATE INJECTION

Please be good enough to give any available information on the preparation of calcium gluconate for intravenous use in ampul medication.—B. W., New York

Instructions under Calcium Gluconate Injection on page 225 of U. S. P. XII should be fairly adequate for your purpose. Ampuls of calcium gluconate solution are rather unstable, and

manufacturers usually employ a stabilizer such as calcium glycerosaccharate or calcium dextrocalcium d-saccharate. Tests and standards for the latter will be found on page 471 of *New and Nonofficial Remedies 1945*, published by the American Medical Association. You should also find helpful Dr. Louis Gershenfeld's book, *Bacteriology and Allied Subjects*, Mack Publishing Company, Easton, Pa., (1945), $6.

LABELING OINTMENT FOR DOGS

Is it required to note active ingredients on a label for an external ointment for dogs?—M. B., New York

We assume that the ointment has been compounded in your pharmacy from ingredients which have been in interstate commerce. If the finished product is not placed in interstate commerce, however, we believe that the labeling requirements of the Federal Food, Drug and Cosmetic Act do not apply. To our knowledge, the Food and Drug Administration has not inaugurated a misbranding action against a product that has not been in interstate commerce after compounding. No doubt you have already checked the labeling requirements of your state laws. Any provisions therein concerning the listing of ingredients, adequate directions, etc., would of course be applicable.

METHYL PARA-HYDROXYBENZOATE

Where can we obtain methyl para-hydroxybenzoate?—S. M. V., Massachusetts

This N. F. preservative should be available through your wholesaler. However, it may be obtained from the Heyden Chemical Corp., 50 Union Sq., New York 3; also the Chemo Puro Mfg. Corp., Goldschmidt Chemical Corp., and R. W. Greeff and Co.

PREPARING LIVER EXTRACTS

For the use of this institution, I would appreciate it very much if you would send me information on the preparation of liver extracts for parenteral use.—A. C., Costa Rica

Such products had best be purchased from companies (such as Armour Laboratories, Chicago 9, Ill.) which manufacture these products and guarantee them. They can be purchased in bulk and then filled into suitable vials, ampuls or other containers. The bulk preparations are sterile and usually preserved with 0.5% phenol. They are refilled under aseptic conditions after Berkefeld filtration. If heat sterilization is employed for the final container, it is advisable not to exceed a temperature of 65° C. for one hour on two or three successive days.

To prepare the extract itself requires extensive processing and a suitable set-up. For instance, if the liver extract is to be similar to the U. S. P. products, livers from edible animals are employed, extracts with suitable solvents are prepared, then concentrated *in vacuo*, followed by fractional precipitation with alcohol at low temperatures and at all points proper *p*H adjustments are made. The nitrogenous nonprotein fraction G of Cohn, *et al.* (*J. Biol. Chem.*, 74:69, 1927) is employed. If the liver extract is one not necessarily to be used for cases of pernicious anemia, other fractions are used. *New and Nonofficial Remedies 1940* and other editions prior to this edition briefly give methods of preparation.

RICE FLOUR UNSATISFACTORY

We haven't been able to produce a smooth, grit-free ointment with the two following prescriptions and would appreciate your advice:

℞ *I.*	*Pine tar ointment*	6
	Zinc oxide	12
	Lead Oint. (Phar. Recipe Book)	12
	Rice flour	12
	Aquaphor, q. s. ad	180
℞ *II.*	*Ichthyol*	9.6
	Zinc oxide	53.6
	Rice flour	53.6
	Neutracolor	4.8
	Aquaphor, q. s. ad	480

—E. W., Indiana

The difficulty experienced with the two prescription formulas is undoubtedly due to an unsatisfactory grade of rice flour. We have been unable to secure an impalpable grade.

The finest powder obtained, when tested through a 100-mesh screen, leaves a residue of 15%. This is not sufficiently fine for ointment use. No doubt the physician will permit the use of rice starch in lieu of rice flour.

In prescription II it is obvious that substituting rice starch for rice flour is apt to give a very stiff ointment. Perhaps the physician would agree to reducing the quantity of this ingredient.

The Hospital Pharmacist

1946 MEETING OF A. S. H. P.

THE American Society of Hospital Pharmacists held its first national meeting since September, 1944, when more than 90 hospital pharmacists convened at Pittsburgh in conjunction with the 1946 convention of the AMERICAN PHARMACEUTICAL ASSOCIATION. Reports of the officers indicated the rapid growth of the organization since 1943 when a group of 150 hospital pharmacists organized as an affiliate of the AMERICAN PHARMACEUTICAL ASSOCIATION. At the present time the Society has more than 800 members.

Projects for the past year included initiation of the first Institute on Hospital Pharmacy held in Ann Arbor, Mich., in July, maintenance of the publication of *The Bulletin*, continuation of work on minimum standards for hospital pharmacies, increased local organization of affiliated groups, and coordination of a series of hospital pharmacy articles written for hospital administrators and published in *Hospitals*, the official journal of the American Hospital Association.

Highlighting the convention was Dr. Edward C. Elliott of the American Council on Education and director of the recently inaugurated Pharmaceutical Survey, who talked with the hospital pharmacists concerning their part in the survey program. Thomas A. Foster and R. D. Kinsey of the U. S. Public Health Service held an informative discussion on "Hospital Pharmacy in the U. S. Public Health Service." Other papers of interest to the group were presented by hospital pharmacists. Joint sessions were also held with the Section on Practical Pharmacy and the American College of Apothecaries, at which papers of mutual interest were presented.

In the chairman's annual address, Don E. Francke of Ann Arbor, Mich., suggested that the Society undertake the following activities in the immediate future:

1. There must be constant activity to increase the membership of the Society and to encourage the formation of affiliated local and regional organizations of hospital pharmacists.

2. The Society should establish a class of membership under the title of "Fellow of the American Society of Hospital Pharmacists." This title should be reserved for those who have been in hospital practice for a least three to five years.

3. The Society should actively cooperate with the Committee on the Pharmaceutical Survey. This important opportunity to bring the problems of hospital pharmacy to educators and others should not be overlooked or treated lightly.

4. The Society should propose regulations to bring the practice of pharmacy in hospitals under the supervision of a qualified pharmacist. These regulations should include the practice of pharmacy in hospitals where the employment of a full-time pharmacist can be justified as well as the very large number of hospitals, including nursing homes, sanatoria, and small private hospitals where at present no qualified pharmacy service is offered. It is estimated that approximately 3000 hospitals in the country are without pharmacy service today. On August 10 the President signed the Hill-Burton bill providing $1,125,000,000 for new hospital construction over a five-year period. This is equivalent to providing for 1125 new one-million dollar hospitals and greatly expands the need of pharmacy service in the nation's hospitals.

5. In those states which do not now give full credit for pharmacy experience gained in hospital pharmacies the Society should actively campaign to correct this unfair and discriminatory practice.

6. The Society should encourage teaching of hospital pharmacy in the nation's colleges of pharmacy.

7. The Society should promote the continuation of annual Institutes on Hospital Pharmacy.

Upon taking office as the new chairman, Hans

S. Hansen of Chicago emphasized that the continued success of the Society depended to a great extent on the activities undertaken during the next few crucial years and urged all to cooperate to increase the membership and to expand the Society's activities.

Following installation of the new A. S. H. P. officers [see September issue] nominations for 1947–1948 officers to be elected by mail ballot this fall were announced. They are: for chairman, Donald A. Clarke, The New York Hospital, and Dr. Arthur Purdum, The John Hopkins Hospital, Baltimore; for vice-chairman, Margaret Savage Gary, U. S. Marine Hospital, Norfolk, and Mildred Carlisle, Pennsylvania Hospital, Philadelphia; for secretary, Leo Godley, New York University Clinic, and Paul Cole, Michael Reese Hospital, Chicago; and for treasurer, Sister Etheldreda, St. Mary's Hospital, Brooklyn, and Sister M. Clara Francis, St. Joseph Hospital, Memphis, Tenn.

A resolution was adopted by the American Society of Hospital Pharmacists to grant an honorary life membership to both Dean Edward Spease and Harvey A. K. Whitney who have been instrumental in raising the standards in hospital pharmacy.

Named to continue as editors of *The Bulletin* of the American Society of Hospital Pharmacists were Don E. Francke, who has served as editor for the past three years, and Miss Gloria Niemeyer. The resolution proposed by the committee on *The Bulletin* also provided that advertising not be accepted unless necessary and that the AMERICAN PHARMACEUTICAL ASSOCIATION will be asked to cooperate in publication.

OXIDIZED CELLULOSE GAUZE USED FOR NASAL HEMORRHAGE

Oxidized cellulose gauze has been reported as particularly valuable in securing hemostasis in certain nasal conditions. Dr. Karl Houser of Philadelphia found this material to have advantages over cauterization and nonabsorbable gauze packing for controlling spontaneous nasal hemorrhages.

The physician inserts sufficient oxidized cellulose gauze with enough pressure to control bleeding. The packing is never removed, for in about sixty hours it becomes a jelly-like mass that comes away without instrumentation.

When ordinary gauze is used, bleeding often recurs upon removal of the packing because of adherance to the hemorrhagic mucosa.

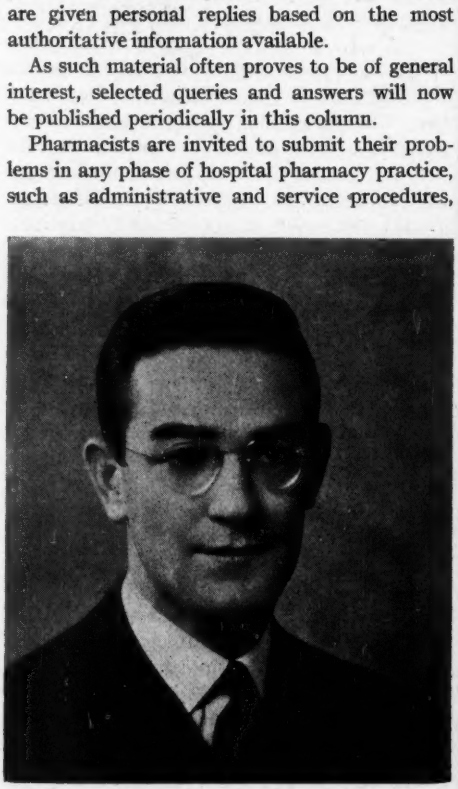
—*J. Am. Med. Assoc.*, 132:143, 1946

Hospital Queries

WITH this issue the JOURNAL inaugurates a new service for hospital pharmacists and others with problems peculiar to the institutional practice of pharmacy. From time to time the JOURNAL receives inquiries of this type which are given personal replies based on the most authoritative information available.

As such material often proves to be of general interest, selected queries and answers will now be published periodically in this column.

Pharmacists are invited to submit their problems in any phase of hospital pharmacy practice, such as administrative and service procedures,



JOHN J. ZUGICH

equipment requirements and sources, technical problems, and library facilities. All inquiries will receive personal replies to the extent that information is available. Material of general interest will be published later in this department. A selection of typical queries and answers appears below.

This service is conducted for the JOURNAL by John J. Zugich, chief pharmacist of New Haven Hospital, New Haven, Conn., teaching affiliate of the Yale College of Medicine.

Mr. Zugich, a University of Illinois alumnus, has had wide experience in hospital pharmacy, having spent four years at University Hospital, Ann Arbor, Mich., where he worked as an intern and subsequently as supervisor of both the laboratory and the dispensary, and as senior pharmacist. Upon appointment as chief pharmacist at Oak Ridge Hospital, Oak Ridge, Tenn., Mr. Zugich was given the responsibility of organizing the pharmacy which supplied medicinals to the people of Oak Ridge. In a short time the pharmacy department was greatly expanded both in size and services to accommodate this rapidly growing city where much of the initial work on the atomic bomb was carried out.

Mr. Zugich is a member of the AMERICAN PHARMACEUTICAL ASSOCIATION and has long been active in the American Society of Hospital Pharmacists. He was a member of the faculty of the recent Institute on Hospital Pharmacy and has served as president of the Southeastern Hospital Pharmacy Association. He has published a number of articles in professional periodicals and is author of a monthly feature on therapeutics in *Southern Hospitals*.

In consenting to conduct the column, Mr. Zugich asks for the cooperation of other hospital pharmacists in supplying information on request when they have specialized knowledge in some phase of practice. Through this medium it is hoped that a freer interchange of information will be established to help raise the over-all level of practice in hospital pharmacy. Queries should be addressed to THIS JOURNAL, 2215 Constitution Ave., N. W., Washington 7, D. C.

— QUERIES —

PRINTING A FORMULARY

Our formulary will shortly be in manuscript form. We are not sure whether reproduction by "mimeo" or "ditto" machines within the institution will prove practical in comparison to a bound, printed book. What would you suggest as an inexpensive printing process for our initial edition of the formulary?

Your telephone book will indicate printing and duplicating firms that can give you estimates on the "multilith" process as a less expensive method comparable to printing. Publishing the formulary through use of duplicating processes available in the institution is both economical and practical, but the finished product is not apt to be esthetically impressive. This may be advisable for your first edition to give the staff an opportunity to test the compilation in use. Any suggested changes in content and arrangement or correction of inadvertent errors can then be taken care of in a final printed and bound edition.

SEPARATE PHARMACY FOR CLINIC?

Our hospital is building a clinic building soon with sufficient space for a new pharmacy. I would appreciate an opinion on the advisability of moving the entire present pharmacy into it as one unit, or keeping two separate units, one in the hospital and the other in the clinic.

There are many factors to consider on the most efficient location. Basically determine the activity that contributes toward the heaviest "load." Centralization there of a single unit is the most ideal for efficiency. If the clinic is too distant from the main hospital it may be necessary to have two units. This may be overcome by the use of a full-time messenger to distribute and pick up pharmacy requests at designated intervals, if one unit is decided upon.

PERPETUAL INVENTORY SYSTEM

I would like to institute a perpetual inventory system on all the stock in our hospital pharmacy. Would you suggest a form?

Actually a "perpetual" inventory card or file system in the strict sense of the word will only be practical if you have sufficient assistance to note all issuances and disbursements. On the surface, it may only be feasible in a small hospital where volume is low. Since pharmaceuticals are "expendable," a record form as listed below will at the end of several months give you sufficient data. A card listing "Date ordered," "Requisition or Invoice Number," "Supplier," "Quantity," "Unit," "Price," "Date Received," and if you wish in addition "Disbursements" can be used as a basic form to be amended as you see fit for your operation. An office supply branch might give added assistance through study of their various forms for stock cards, which could be modified to your needs.

PRESENT STATUS OF STREPTOMYCIN

WHEN commercial distribution of streptomycin began in September about 1600 general hospitals were designated as depots for the drug. Although supplies remain inadequate to meet the demand, any non-depot hospital or any physician may call upon a depot hospital for the purchase of streptomycin for treatment of streptomycin-indicated conditions. In cases of established need, the Civilian Production Administration has asked that depot hospitals recognize the requests of other institutions to the best of their ability in consideration of their supply on hand. Each depot hospital is limited to a monthly quota, however, and only when total supplies permit can additional quantities be made available even for justified needs.

If a non-depot hospital is unable to obtain streptomycin from a designated depot hospital in its area, the hospital may communicate directly with the Chemicals Division, Civilian Production Administration, Attention: Dr. Edward O. Haenni, Washington 25, D. C. The telephone number is Republic 7500, Extension 73267 or 73268.

This distribution system is very similar to that used initially for penicillin. Officials point out that it is a temporary procedure until sufficient streptomycin is available to provide a reasonably equitable supply through normal channels of distribution to all hospital and retail pharmacies.

Until the present distribution plan was established, the small supplies of streptomycin available had been distributed by CPA for urgent needs of the Army, Navy, Public Health Service, Veterans Administration, and for the National Research Council's integrated clinical research program directed by Dr. Chester S. Keefer.

The latter constituted the first privately financed, nationally coordinated clinical evaluation in history. It was made possible by a joint contribution of nearly $1,000,000 from pharmaceutical and chemical manufacturers who produce streptomycin. In addition the manufacturing laboratories invested something over $20,000,000 in production facilities for a drug that until recently remained an enigma.

From the beginning streptomycin has typified the difficulties of placing a new antibiotic drug in the hospital and retail pharmacy. In discovering the streptomycin-producing organism, Waksman and his co-workers had examined thousands of actinomycetes, fungi and bacteria isolated from soils, manures and peat bogs. Many special techniques had to be devised and false starts made before it was possible to suggest that the antibiotic substance from *Streptomyces griseus* might provide the long-sought chemotherapeutic agent that would be practical therapeutically against gram-negative bacteria.

Then came difficult problems of determining the most productive strains, the best media for growth and methods of isolation, purification and assay. There were extensive investigations of chemical and biological properties, of the bacteriostatic spectrum and toxicity studies.

As clinical trials got under way, evaluation was greatly speeded by carefully controlled streptomycin distribution for experimental use under Dr. Keefer's direction. The results of this nationally coordinated clinical trial have now been made available in the report by Dr. Keefer reproduced on page 461. The CPA requests that all physicians use streptomycin so far as possible in accordance with these recommendations.

During past months many production difficulties have been encountered, both because of new types of processes and equipment required and because of continued postwar shortages of needed materials. By granting highest priority assistance for construction of streptomycin plants the CPA has helped to increase streptomycin production rapidly.

As limited quantities of streptomycin became sufficient to permit some civilian medical use, in addition to continued clinical research, the present plan was established to make the drug "available to the greatest number of patients to whom its administration is justified in current medical practice in the shortest period of time without wasting material."

In explaining this procedure the CPA commented further: "In order to reach immediately the greatest need and because frequent parenteral administration is required, it was recognized that hospitals represented the best mechanism for initial distribution.

"Supplies will not be adequate at first for complete distribution to hospitals, or for distribution to wholesalers and prescription pharmacies . . . When the supply of streptomycin for civilian use increases to the point where it is considered ample," pharmacists were assured, "this procedure will be discontinued and all manufacturers will employ their respective methods of commercial distribution through whatever channels they prefer."

INDICATIONS, CONTRA-INDICATIONS, MODE OF ADMINSTRATION, DOSAGE AND TOXIC EFFECTS OF STREPTOMYCIN

A GUIDE to the use of streptomycin hydrochloride or sulfate, based upon a study of 1500 cases reported by physicians from all parts of the United States. This report has been prepared by Dr. Chester S. Keefer, chairman of the Committee on Chemotherapeutics and Other Agents of the National Research Council.

GROUP I INDICATIONS

1. All cases of tularemia.
2. All cases of H. influenzae infections:
   - Meningitis.
   - Endocarditis.
   - Laryngotracheitis.
   - Urinary tract infections.
   - Pulmonary infections.
3. All cases of meningitis due to:
   - E. coli.
   - B. proteus.
   - B. Friedlander.
   - B. Lactis aerogenes.
   - B. Pyocyaneus.
   - B. paratyphoid.
4. All cases of bacteremia due to gram negative organisms:
   - E. coli.
   - B. proteus.
   - A. aerogenes.
   - Ps. aeruginosa (B. pyocyaneus).
   - B. Friedlander.
5. Urinary tract infections due to:
   - E. coli.
   - A. aerogenes.
   - B. proteus.
   - B. Friedlander.
   - B. Lactis aerogenes.
   - H. influenzae.
   - Ps. aeruginosa.

INDICATIONS IN GROUP II

Streptomycin has been found to be a helpful agent in the treatment of the following diseases but its position has not been definitely defined.

1. Peritonitis due to gram-negative bacilli.
2. B. Friedlander's pneumonia.
3. Liver abscesses due to gram-negative bacilli.
4. Cholangitis due to gram-negative bacilli.
5. Penicillin-resistant but streptomycin-sensitive organisms infecting heart valves.
6. Tuberculosis.
7. Chronic pulmonary infections due to mixed gram-negative flora.
8. Empyema due to gram-negative infections.

CONDITIONS IN GROUP III OF QUESTIONABLE VALUE

Streptomycin is of questionable value in the following conditions:

1. Typhoid fever.
2. Brucellosis.
3. Salmonella infections.

GROUP IV CONDITIONS IN WHICH STREPTOMYCIN IS INEFFECTIVE

Streptomycin is ineffective in the following conditions:

1. All Clostridia infections.
2. Malaria.
3. Rickettsial infections.
4. Infections with moulds and fungi.
5. Virus infections.

CONTRA-INDICATIONS TO USE OF STREPTOMYCIN

It should be pointed out that while streptomycin may have an inhibiting effect on both gram-positive as well as gram-negative microorganisms, most strains of gram-positive organisms are much more sensitive to penicillin than to streptomycin. Therefore penicillin continues to be the drug of choice in the treatment of staphylococcic, streptococcic, pneumococcic, gonococcic and meningococcic infections. Occasionally an infection due to a gram-positive organism may be resistant to penicillin and susceptible to streptomycin. In such instances streptomycin should be used. The decision can be made by testing the infecting organism for resistance to both penicillin and streptomycin *in vitro*.

It should be remembered, therefore, that penicillin continues to be the drug of choice in all susceptible gram-positive coccal infections, and in infections due to the gonococcus and meningococcus. Streptomycin is the drug of choice in susceptible gram-negative bacillary infections.

TOXICITY

All patients who are treated with streptomycin should be watched carefully for various reactions. Streptomycin is not a homogeneous product and certain patients will develop signs of hypersensitivity or toxicity. The following reactions have been recorded:

1. Pain and tenderness at local site of injection.
2. Headache.
3. Fever.
4. Skin eruptions.

5. Tachycardia and fall in blood pressure.
6. Eighth nerve disturbances—i.e., vertigo, tinnitus, deafness.
7. Paraesthesias about the face.
8. Flushing of the skin.

When skin eruptions occur it is well to discontinue the drug. When patients receive streptomycin for three weeks practically all of them develop vertigo which persists in varying degrees of severity for days or weeks after streptomycin is discontinued. It is most noticeable in ambulatory patients and there is some evidence that the vertigo is due to labyrinthian disturbances which are irreversible.

STREPTOMYCIN RESISTANCE AND FASTNESS

Many infections due to gram-negative bacilli are extremely resistant to the action of streptomycin. One of the reasons for many clinical failures is the inability to give enough streptomycin to inhibit the growth of the infecting organism. Another reason for failures of treatment is due to the rapid development of resistance to streptomycin *in vivo*. That is to say, many organisms develop resistance to streptomycin with amazing rapidity even when maximum tolerated doses are given early in the course of therapy.

It is recommended, therefore, that all organisms be tested for their sensitivity before the onset of treatment and that adequate amounts of streptomycin be given from the beginning of treatment. That is, a sufficient concentration of streptomycin should be maintained in the tissues and in the urine to completely inhibit the growth of the infecting organisms.

METHOD OF PREPARING STREPTOMYCIN FOR TREATMENT

Streptomycin is supplied in ampoules containing 0.5 to 1.0 gram each. There are two salts in common use, streptomycin hydrochloride and streptomycin sulfate. They are both readily soluble in small amounts of sterile pyrogen-free water or normal physiologic saline solution in concentrations of 100 to 125 mg. per cc. Streptomycin is relatively thermostable and neither the powder nor the solutions show any appreciable loss of potency at room temperature for periods as long as a month. It is well, however, to store solutions in the ice box when not in use.

1. *For Intramuscular or Subcutaneous Injection:*

The total volume of individual injections should be small—i.e., 100 to 125 mg. per cc. A small amount of 1 per cent procaine hydrochloride solution may be added to the solution to alleviate pain. The local application of an ice bag may also decrease the pain at the local site of injection.

2. *For Intrathecal Injection:*

Twenty to 50 or 100 milligrams may be dissolved in 5 to 10 cc. of sterile salt solution for injection into the subarachnoid space every 24 hours.

3. *For Intrapleural or Intraperitoneal Injection:*

One-half to one gram may be dissolved in 20 to 50 cc. of sterile salt solution for injection into the pleural or peritoneal cavity.

METHODS OF ADMINISTRATION OF STREPTOMYCIN

There are three common methods of administering streptomycin—subcutaneous, intramuscular, and intrathecal. Intermittent intravenous administration has no advantage over the intramuscular method and since it may produce disagreeable side reactions this route of administration should be avoided. Intermittent intramuscular injections is the preferred method. The gluteal, thigh or deltoid muscles are best suited for injections, and it is important to rotate the site of injection between doses.

DOSAGE

The dosage of streptomycin will vary from one patient to another depending on the type and severity of infection. The objective in every case is to bring the infection under control as quickly as possible. Inasmuch as acquired resistance *in vivo* occurs rapidly in some patients with infections due to susceptible organisms, maximum doses should be used from the onset.

It is well to remember that resistance may develop in spite of the use of maximum tolerated doses. Also that streptomycin is excreted promptly in the urine. Repeated intramuscular injections every 3 or 4 hours should be employed.

1. *Tularemia.* Dosage—240 milligrams to 1 gram in divided doses of 30 to 125 mg. every 3 hours for 5 to 7 days depending upon the clinical course of the disease and response to treatment. Intermittent intramuscular injection route of choice.

2. *H. Influenzae meningitis.* Dosage—Intermittent intramuscular injections—0.5 to 1.0 gram daily in divided doses of 50 to 125 mg. every 3 hours for 5 to 7 days. *Intrathecal* injection of 50 mg. streptomycin once daily for 7 days. In all cases, blood cultures, throat cultures and spinal fluid cultures should be made daily. Complicating staphylococcus infections should be watched for in all cases.

3. *Urinary tract infections.* Dosage—1 to 3 grams daily in divided doses every 3 hours for 5 to 7 days depending upon the type of infecting organism and the clinical response. Constitutional and local signs of infection may disappear without sterilization of the urine. Factors that interfere with the sterilization of the urine are

obstruction to the free flow of urine, renal calculi and the development of resistance of the infecting organism, or the appearance of new and resistant organisms. The most sensitive organisms are B. proteus, Ae. aerogenes, B. Friedlander, E. coli. More resistant organisms are Ps. aeruginosa, Salmonella, Streptococcus faecalis, Enterococci.

4. *Bacteremia due to susceptible gram-negative bacilli.* Dosage—2 to 4 grams daily in divided doses every 3 hours for 7 to 10 days depending upon site of lesion, species of organism and response to therapy.

5. *Peritonitis due to gram-negative bacilli.* Peritonitis being a complex infection often due to a mixture of organisms some of which are sensitive to penicillin and others to streptomycin, it is difficult to assess the relative importance of streptomycin and other forms of therapy which are employed in a given case. In view of experimental studies in peritonitis of animals and the studies which have been carried out in man, there are reasons for believing that streptomycin is helpful in this group of diseases. Dosage—2 to 4 grams daily in divided doses every 3 or 4 hours for 5 to 10 days.

6. *Liver abscess and cholangitis.* Streptomycin is excreted in part in the bile and for that reason it has been used in cases of liver abscess and cholangitis with varying results. When susceptible organisms are present it may assist in inhibiting the infection. The dosage is the same as in the case of peritonitis.

7. *B. Friedlander's pneumonia.* Some strains of Friedlander bacilli are extremely sensitive to the action of streptomycin. A few acute cases with pneumonia have recovered. Two to three grams a day for 5 to 10 days should be used. The cases of chronic Friedlander's infection of the lung have not responded in a permanent fashion.

8. *Chronic pulmonary infections due to mixed bacterial flora.* Streptomycin parenterally or by inhalation has proved of value in some patients with chronic pulmonary suppuration. When used by inhalation, concentrations of 50 mg. per cc. may be inhaled in a total amount of 500 mg. over a 24-hour period. Parenteral injections of 1 to 3 grams a day in divided doses have been used.

9. *Endocarditis.* Occasional patients with bacterial endocarditis due to penicillin-resistant and streptomycin-sensitive organisms may recover temporarily following streptomycin therapy. The dosage should be 2 to 4 grams daily in divided doses for a minimum period of 3 to 4 weeks.

10. *Tuberculosis.* In view of the present limitation of supplies of streptomycin and the uncertainties of the amounts that will be available in the next six months, it is the opinion of the Committee that no patient with tuberculosis should be started on treatment with streptomycin unless the physician is reasonably certain that he can obtain enough material for a minimum period of 3 to 4 months' treatment, using 1.5 to 3.0 grams daily (a minimum amount of 135 to 270 grams for an individual patient). Moreover, every patient should be warned that when streptomycin is given in this amount they will develop vertigo which is due to disturbances in the labyrinth which are irreversible. That is to say, they are permanent. Once vertigo appears, many patients learn to compensate for it so that it becomes less noticeable with the passage of time but caloric tests show that disturbances in vestibular function are permanent.

Insufficient or inadequate treatment will inevitably lead to many disappointments. It should be stressed that streptomycin will not replace any of the established forms of treatment and it should never be used as a substitute for other forms of therapy.

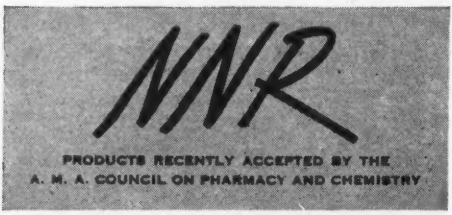
11. *Empyema.* The use of streptomycin locally in the treatment of empyema may end in the sterilization of the cavity. The injection of 0.5 to 1.0 gram daily directly into the pleural cavity along with systemic treatment should be used in all cases.

DISEASES IN WHICH THE EFFECT OF STREPTOMYCIN IS QUESTIONABLE

1. *Typhoid fever.* From the results that have been obtained so far there is no evidence that streptomycin shortens the clinical course of typhoid fever. The dosage has been from 4 to 5 grams daily in divided doses intramuscularly every 3 hours for 10 to 14 days.

2. *Salmonella infections (systemic).* So far the results have been inconclusive when 4 grams are given daily in divided doses intramuscularly every 3 hours for 7 to 17 days.

3. *Acute brucellosis.* The course of an acute attack of fever due to brucellosis is not appreciably shortened when 4 grams are given daily in divided doses intramuscularly every 3 hours for 10 to 14 days. *August, 1946*



Council descriptions of drug products are published regularly in This Journal as they are accepted. Rules upon which the Council bases its action appeared in the July (7:320) 1946 issue and may be secured in pamphlet form upon request to the Secretary, Council on Pharmacy and Chemistry, American Medical Association, 535 N. Dearborn St., Chicago.

ALUMINUM HYDROXIDE GEL (See New and Nonofficial Remedies, 1945, p. 398).

The following dosage form has been accepted:

THE RESERVE RESEARCH CO., CLEVELAND

Aluminum Hydroxide Gel: 360-cc. bottles. Contains 5.5 per cent of aluminum hydroxide (equivalent to 3.6 per cent of aluminum oxide) and, as a flavoring agent, oil of peppermint.

PHENOBARBITAL SODIUM (See New and Nonofficial Remedies, 1945, p. 524).

The following additional dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Phenobarbital Sodium (Powder): 0.324 Gm. in 2-cc. ampuls.

NIKETHAMIDE (See New and Nonofficial Remedies, 1945, p. 345).

The following dosage form has been accepted:

THE NATIONAL DRUG CO., PHILADELPHIA

Solution Nikethamide 25% W/V: 2-cc. and 5-cc. ampuls and for oral use 15-cc. and 120-cc. bottles with 0.5 per cent chlorobutanol added as a preservative.

NICOTINAMIDE (See New and Nonofficial Remedies, 1945, p. 618).

The following additional dosage form has been accepted:

INTERNATIONAL VITAMIN CORPORATION, NEW YORK

Tablets Niacin Amide: 100 mg.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1945, p. 610).

The following additional dosage form has been accepted:

INTERNATIONAL VITAMIN CORPORATION, NEW YORK

Tablets Thiamine Hydrochloride: 3 mg.

PROCAINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1945, p. 97).

The following additional dosage forms have been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Sterile Procaine Hydrochloride Crystals for Spinal Anesthesia: 500-mg. ampuls.

Procaine Hydrochloride Solution 5% W/V: 10-cc. ampuls. Each 10 cc. contains procaine hydrochloride 0.5 Gm. in water with 0.1 per cent sodium thiosulfate.

Procaine Hydrochloride Solution 20% W/V: 5-cc. ampuls. Each 5 cc. contains procaine hydrochloride 1 Gm. in water with 0.1 per cent sodium thiosulfate.

VITAMIN D (See New and Nonofficial Remedies, 1945, p. 626).

The following additional dosage form has been accepted:

WINTHROP CHEMICAL CO., INC., NEW YORK

Drisdol in Propylene Glycol: 10-cc. bottles. Each cubic centimeter contains 0.25 mg. of drisdol and has a potency of 10,000 units of vitamin D (U. S. P.) per gram. The propylene glycol used in the preparation of this product complies with the standards for propylene glycol-N. N. R.

METAPHEN (See New and Nonofficial Remedies, 1945, p. 150).

The following additional dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Metaphen Disinfecting Solution for Dental and Surgical Instruments: 946-cc. and 3785-cc. bottles. Contains Metaphen 1:2500 w/v and benzyl alcohol 4.0 per cent in an aqueous solution containing ethylene glycol 20.0 per cent w/v and sufficient sodium hydroxide and sodium carbonate to neutralize the metaphen.

MANNITOL HEXANITRATE (See New and Nonofficial Remedies, 1945, p. 334).

The following dosage form has been accepted:

GEORGE A. BREON & CO., INC., KANSAS CITY, MO.

Tablets Mannitol Hexanitrate: 30 mg.

ANTHRALIN (See New and Nonofficial Remedies, 1945, p. 117).

The following dosage form has been accepted:

WINTHROP CHEMICAL CO., INC., NEW YORK

Cignolin: 10-Gm. bottles. Crystalline anthralin.

PERTUSSIS VACCINE, ALUM PRECIPITATED (See *J. Am. Med. Assoc.*, Jan. 5, 1946, p. 31).

The following dosage form has been accepted:

SHARP & DOHME, INC., GLENOLDEN, PA.

Pertussis Bacterin, Alum Precipitated: 3-cc. vial (one immunization) and 10-cc. vial (three immunizations). 10,000 million H. pertussis per cubic centimeter. Preserved with phenylmercuric nitrate 1:50,000.

BACTERIAL VACCINE MADE FROM HEMOPHILUS PERTUSSIS (See *J. Am. Med. Assoc.*, Jan. 5, 1946, p. 31).

The following dosage form has been accepted:

WYETH INCORPORATED, PHILADELPHIA

Pertussis Vaccine (Modified): 12-cc. and 20-cc. vials. 15,000 million H. pertussis per cubic centimeter. Preserved with phenol 0.5 per cent.

PENTOTHAL SODIUM (See New and Nonofficial Remedies, 1945, p. 517).

The following additional dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Pentothal Sodium (Rectal): 3-Gm. vials with 0.18 Gm. anhydrous sodium carbonate as a buffer.

DIETHYLSTILBESTROL DIPROPIONATE (See *J. Am. Med. Assoc.*, March 30, 1946, p. 857).

The following dosage forms have been accepted:

GEORGE A. BREON & CO., INC., KANSAS CITY, MO.

Caplets Diethylstilbestrol Dipropionate: 0.2 mg., 0.5 mg., 1.0 mg. and 5.0 mg.

Solution Diethylstilbestrol Dipropionate (In Sesame Oil): 1.0 mg. per cc. in 1-cc. ampuls.

ESTROGENIC SUBSTANCES (See New and Nonofficial Remedies, 1945, p. 436).

The following dosage form has been accepted:

BARRY BIOLOGICAL LABORATORY, DIVISION OF BARRY ALLERGY LABORATORIES, INC., DETROIT

Solution Estrogenic Hormones (Natural): 30-cc. and 100-cc. vials containing the equivalent of 10,000 international units per cubic centimeter of estrone in sesame oil with chlorobutanol 0.5 per cent as a preservative.

RIBOFLAVIN (See New and Nonofficial Remedies, 1945, p. 614).

The following dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Tablets Riboflavin: 10 mg.

PENTOBARBITAL SODIUM (See New and Nonofficial Remedies, 1945, p. 516).

The following dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Solution Pentobarbital Sodium: 1-cc. and 2-cc. ampuls. Each cubic centimeter contains pentobarbital sodium 0.1625 Gm. and benzyl alcohol 2 per cent; in propylene glycol.

CONTRACEPTIVE JELLIES AND CREAMS (See New and Nonofficial Remedies, 1945, p. 355).

The following article has been accepted:

LEHN & FINK PRODUCTS CORPORATION, BLOOMFIELD, N. J.

Lygel Vaginal Cream: 85-Gm. collapsible tubes. A white stearic acid cream having a *p*H of 3.4, prepared from the formula:

Stearic acid	18.00%
Cetyl alcohol	4.00
Lactic acid	0.35
p-chloro-symm. m.—Xylenol	0.10
p-tert. amylphenol	0.10
Sorbitol	6.00
Nacconol	2.00
Perfume	0.10
Water to make	100.00

Packaged with a Lygel Vaginal Applicator or in refill packages containing a tube of cream only.

U. S. patent 1,953,413 (April 3, 1934).
U. S. trademarks 343,141 and 248,042.

Action, Uses and Dosage.—See article on Contraceptive Jellies and Creams.

ALLERGENIC PREPARATIONS (See New and Nonofficial Remedies, 1946, p. 35).

The following allergenic extracts have been accepted:

PITMAN-MOORE COMPANY, INDIANAPOLIS

Allergenic Extracts: The following pollen extracts are marketed in single 5-cc. vials containing 10 [illegible] units per cubic centimeter and in packages containing one 5-cc. vial of the extract, together with three vials containing 4.5 cc. of sterile isotonic sodium chloride diluent for the preparation of solutions containing 1000, 100 and 10 pollen units per cubic centimeter.

Mixed Grass (Sweet Vernal Grass, Blue Grass, Johnson Grass, Redtop and Timothy, in equal parts); Ragweed Pollens (Mixed) (Giant Ragweed and Short Ragweed, in equal parts).

Allergenic extracts-Pitman-Moore are prepared by the following method: The dried pollens are extracted with a menstruum containing an equal volume of glycerin and water, to each hundred cubic centimeters of which has been added sodium chloride 0.15 Gm., sodium bicarbonate 0.135 Gm. and merthiolate 10 mg. as a preservative. After extraction for seventy-two hours the mixture is filtered through paper and then through a Berkefeld filter. The extract is tested for sterility after filtration and also after filling. The finished product represents a 1 per cent extract of the dried pollen. Each cubic centimeter represents 10,000 pollen units; 1 unit corresponds to 0.001 mg. of dried pollen.

PERTUSSIS VACCINE ALUM PRECIPITATED (See *J. Am. Med. Assoc.*, Jan. 5, 1946, p. 31).

The following dosage form has been accepted:

PARKE, DAVIS & CO., DETROIT

Pertussis Vaccine (Alum Precipitated) (Sauer): 1.5-cc. and 6-cc. vials. Each cubic centimeter contains 30,000 million Hemophilus pertussis in 0.6 per cent solution of sodium chloride. Preserved with merthiolate, 0.01 per cent.

ESTROGENIC SUBSTANCES (See New and Nonofficial Remedies, 1946, p. 443).

The following additional dosage form has been accepted:

LAKESIDE LABORATORIES, INC., MILWAUKEE

Aqueous Suspension of Estrogens: 1-cc. ampul and 5-cc. vials. A sterile suspension, each cubic centimeter of which contains estrogenic substances (water insoluble) equivalent to 20,000 international units of estrone, in isotonic solution of sodium chloride.

PENICILLIN (See New and Nonofficial Remedies, 1945, p. 214).

The following additional dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Penicillin Sodium: 200,000 unit vials.

SULFADIAZINE (See New and Nonofficial Remedies, 1946, p. 181).

The following dosage form has been accepted:

FLINT, EATON & CO., DECATUR, ILL.

Tablets Sulfadiazine: 0.5 Gm.

PENICILLIN IN OIL AND WAX.—A sterile suspension of calcium penicillin in a mixture of highly refined peanut or sesame oil and white wax, U. S. P., or yellow wax, U. S. P.

Actions and Uses.—Penicillin suspended in oil and wax is slowly absorbed following intramuscular injection. After the injection of 1.0 cc. of a mixture containing 300,000 units of penicillin per cubic centimeter significant blood concentrations of penicillin have been observed for from twelve to twenty-four hours. Injection of lower concentrations decreases the duration of effective penicillin blood levels, 100,000 units giving a measurable blood level for approximately eight hours and 200,000 units being effective for about twelve hours.

Penicillin in oil and wax may be used for all the conditions for which penicillin dissolved in saline solution is used. The principal difference between the two lies in the frequency of injection: saline solutions must be injected once every two to three hours, whereas oil and wax mixtures require injection only every twelve to twenty-four hours.

Dosage.—At least 300,000 units every twenty-four hours should be administered, either as a single dose or in two doses twelve hours apart. For severe infections two 300,000-unit doses twelve hours apart may be necessary. For the treatment of gonorrhea, one injection of 300,000 units of penicillin in oil and wax appears to be sufficient for the majority of cases. If the subjective symptoms do not subside rapidly, a second injection of 300,000 units should be given twenty-four hours after the first.

To facilitate withdrawal and administration of penicillin in oil and wax, a dry, warm syringe fitted with an 18-gage needle should be used to withdraw the mixture from the ampul, which has been warmed to 37 to 39° C. Injection should be made through an 18-gage needle deep into the upper outer quadrant of the buttocks. Before injection the plunger of the syringe should be drawn back slightly to make certain the needle is not in a blood vessel. Intravenous injection may be dangerous.

BRISTOL LABORATORIES, INC., SYRACUSE, N. Y.

Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter, 10-cc. vials. Calcium penicillin suspended in peanut oil containing 4.8% (w/v) white wax, U. S. P.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Penicillin (Calcium) in Oil and Wax: 300,000 units per cc., 5-cc. vials. Calcium penicillin suspended in peanut oil containing 4.8% (w/v) white wax, U. S. P.

PENICILLIN (See New and Nonofficial Remedies, 1946, p. 212).

The following additional dosage form has been accepted:

COMMERCIAL SOLVENTS CORPORATION, TERRE HAUTE, IND.

Crystalline Penicillin Sodium: 200,000 and 500,000 units in 20-cc. vials.

SULFANILAMIDE (See New and Nonofficial Remedies, 1946, p. 189).

The following dosage form has been accepted:

FLINT, EATON & CO., DECATUR, ILL.

Tablets Sulfanilamide: 0.25 Gm.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1946, p. 199).

The following additional dosage form has been accepted:

FLINT, EATON & CO., DECATUR, ILL.

Tablets Sulfathiazole: 0.25 Gm.

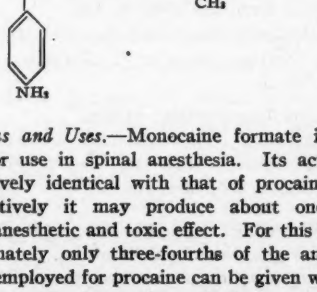
SODIUM DEHYDROCHOLATE (See New and Nonofficial Remedies, 1946, p. 354).

The following dosage form has been accepted:

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Solution Sodium Dehydrocholate 20% W/V: 5-cc. vials.

MONOCAINE FORMATE.—2-Isobutylaminoethyl *p*-aminobenzoate formate.—2-*p*-Aminobenzoxy-N-isobutyl-ethylamine formate.—The formic acid salt of the ester formed from *p*-aminobenzoic acid and the N-isobutyl derivative of ethanolamine. $C_{14}H_{22}N_2O_4$.—M. W. 282.34.



Actions and Uses.—Monocaine formate is proposed for use in spinal anesthesia. Its action is qualitatively identical with that of procaine, but quantitatively it may produce about one-third greater anesthetic and toxic effect. For this reason approximately only three-fourths of the amounts usually employed for procaine can be given with an equal degree of safety and anesthesia.

Dosage.—As with the use of other agents for spinal anesthesia the dosage is dependent on the speed and mode of injection, the size of the patient and the length of the operative procedure to be performed. As already indicated, the dosage of monocaine should

correspond to about three-fourths of that ordinarily employed for procaine.

Tests and Standards.—

Monocaine formate occurs as odorless, white crystals, which melt at 136–139° C. It is freely soluble in water and in ethanol; very slightly soluble in benzene, and slightly soluble in chloroform and in ether. The *p*H of a 1 per cent aqueous solution is about 6.1.

For tests and standards see *J. Am. Med. Assoc.*, 132: 23, 1946.

NOVOCOL CHEMICAL MFG. CO., INC., BROOKLYN

Monocaine Formate (Crystals): 50-, 100-, 150- and 300-mg. ampuls; 200- and 500-mg. containers (multiple dose). For spinal anesthesia.

Sterile Solution Monocaine Formate 5%: 2-cc. ampuls for spinal anesthesia. Each cubic centimeter contains 50 mg. of monocaine formate in sterile distilled water.

U. S. patent 2,139,818 (Dec. 13, 1938; expires 1955).
U. S. trademark 353,653.

PENICILLIN FACTS AND RUMORS

Recent articles in periodicals of wide circulation have created unwarranted fears in the minds of the public concerning the value of penicillin and other new remedies.

Unfortunately, some of the articles are factually incorrect. The creation of doubts and fears in the minds of patients concerning the therapy which they receive may prevent the fullest realization of benefits from treatment.

Physicians should be in a position to give their patients the facts concerning penicillin and to allay any doubts or fears created by these publications. Briefly, the facts concerning the latest developments in penicillin therapy are as follows:

1. Commercial penicillin has consisted of varying mixtures of one or more of the five known fractions, F, G, X, K and dihydro F.

2. Penicillin K is apparently rapidly destroyed or eliminated in the body, and therapeutic levels are not achieved or maintained in the body fluids following ordinary doses.

3. Commercial penicillin now available is predominantly penicillin G, which is known to be effective although some of the penicillin produced for a few months in 1945 may have had relatively less G and more K than previous or subsequent batches.

4. As far as facts are available, penicillins F and X are as active clinically as penicillin G. Further research will be necessary to define their usefulness with preciseness.

5. Since precise methods are not available for the routine determination of the quantities of each fraction in each batch of penicillin, the National Research Council has recommended increased dosage of penicillin as a safety precaution, particularly in the treatment of syphilis, in which the end result of therapy cannot be evaluated for a long time.

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6. Although bacteria have been made resistant to penicillin in the test tube, development of clinical resistance has not become a problem. Such an eventuality may be prevented, in part, by giving adequate and not minimum doses of penicillin.

7. All penicillin and penicillin pharmaceuticals currently on the market have been examined and certified as to safety and efficacy by the United States Food and Drug Administration.

8. It is possible that natural or synthetic variations of the penicillin molecule will result in the development of a clinically better penicillin. None better than penicillin G is now available.

While it is realized that the rapid developments now being made in therapeutics make it increasingly difficult for busy physicians to read and evaluate the many scientific articles appearing in hundreds of periodicals, the physician can keep himself informed of the more important developments through a study of the Reports of the Council on Pharmacy and Chemistry. Furthermore, the Council office and its personnel are always ready to answer inquiries and furnish information on drugs and therapeutic agents. Physicians, by using this service, can allay the fears of their patients who have come to doubt the efficacy of penicillin even when properly used.

ETHYLENE DISULPHONATE UNACCEPTABLE

(Comment based on Council report)

THIS JOURNAL has received numerous inquiries concerning Ethylene Disulphonate, an ampul preparation marketed by the Spicer-Gerhart Co. of Pasadena, Calif. (laboratory at Sunland, Calif.). On the basis of authoritative medical opinion, the JOURNAL has commented adversely on this product both in print and in correspondence. The solution is essentially distilled water, although the firm claims that it contains a chemical, designated as Ethylene Disulphonate, in a dilution of 1 to 10^{-15}. Administration is by intrasmuscular injection for use in treating various allergic conditions.

Although the American Medical Association previously has commented unfavorably on Ethylene Disulphonate, the product has apparently enjoyed considerable use. In view of this the A. M. A. Council on Pharmacy and Chemistry has now compiled an extensive report setting forth the facts of the situation as nearly as they can be determined.

The origin of the use of Ethylene Disulphonate appears to lie in a British report published in 1940. This report advances the theory that an allergic state is the outcome of a disturbance in cellular carbohydrate metabolism and postulates that this is due to the absence or inhibition of an oxidation catalyst of coenzyme activity in the momentary formation of ketene from acetaldehyde. The ketene is presumably the final breakdown product of carbohydrate, leading to the formation of carbon dioxide and water.

The British authors state that "extensive search" was instituted for some substance to "replace this part of the dehydrogenase coenzyme system," thought to be absent because of "inherited faulty metabolism ('inherited allergy') or due to inhibitions by bacterial toxins" and that they "anticipated this as being a short carbon chain compound having two or more unsaturated carbon linkages." They claim to have succeeded in preparing unsaturated bodies from both glucose and fructose and from two carbon chain compounds, such as acetaldehyde, that act physiologically in the manner anticipated, the probable nature of which was said to be "typically that of ethylene disulphonate, which may exist in conjunction with other compounds and/or adsorbed on to specific proteins." The hypothetical formula given was $C_2H_2(SO_3H)_2$.

No actual data have been furnished, however, to indicate how the compound was prepared or selected, or to show the means by which such high dilutions as 1 to 10^{-15} were found to be optimum. Computation reveals that, for this dilution, 1 mg. of so-called ethylene disulphonate would require more than 250 million gallons of water. The dilution claimed would be equivalent to one-billionth part per million, which is outside the practical limits of detection in the laboratory.

In an effort to investigate claims made for the product the Council on Pharmacy and Chemistry requested an opinion or résumé of results from physicians known to have conducted clinical observations with the product. Of 12 replies received, all but two were unanimous in the opinion that the drug was of no value in any of the various allergic conditions for which it had been tried.

Following the original British report, a number of favorable reports on ethylene disulphonate were published in this country. These are critically analyzed in the statement by the Council on Pharmacy and Chemistry, which may be consulted in full in the *Journal of the American Medical Association*, 131:1495, 1946. The summary from the Council's statement is reproduced below for pharmacists who may receive inquiries or who may have been induced to stock the product:

"From a review of the published reports, the statement by the American Medical Association Chemical Laboratory and replies received from physicians investigating Ethylene Disulphonate in the treatment of various allergic conditions, not only is it evident that the existence of such a compound is open to serious doubt but the theory of its dilution and supposed part as an oxidation catalyst of carbohydrate metabolism is based on flimsy biochemical conjectures that have no proved connection with the mechanism of allergy if, indeed, there is any. Clinical reports of favorable results obtained with the product are based on either entirely uncontrolled or poorly controlled studies that do not eliminate the psychologic effect nor take account of the influence of the scheme of dietary and other measures suggested by the originators and furthermore do not satisfactorily take into account the factor of spontaneous remission that characterized chronic allergic manifestations. In the experimental and clinical studies where distilled water is used as a control, neither protection against anaphylactic shock in animals nor improvement in the symptoms of allergic patients can be attributed to the solution of so-called Ethylene Disulphonate.

"Examination of the product indicates that by ordinary tests it cannot be distinguished from dis-

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tilled water, as might be expected if the so-called substance was present in the high dilution claimed. As against one-billionth of 1 part per million (equivalent of the claimed dilution) the pharmacopœial standard for residue of distilled water provides for not more than 1 mg. per hundred cubic centimeters (10 parts per million), a maximum allowance for ten billion times as much inert material as the claimed amount of active substance in Ethylene Disulphonate (solution)! Neither the originators of the theory employing the British brand, Allergosil (Endocrine-Spicer, Ltd.), nor the reports on the American counterpart, Ethylene Disulphonate (Allergosil brand), have indicated the method by which such a compound was made, synthetically or otherwise.

"The emphasis of the originators and the American manufacturer on the means to avoid its supposed rapid oxidation by contact with air, metal, oil and certain chemical substances has the effect of concentrating so much attention on the technique that the credulous user is diverted from consideration of the significance of the extreme dilution of the so-called active substance. The statement made by the firm that 'No disinfectant may be used on the site of the injection' is footnoted in its booklet with the statement 'One clinician reports using hydrogen dioxide without deleterious effect.' This tends to imply that ordinary disinfectants may inactivate the supposedly rapidly oxidized, highly unstable Ethylene Disulphonate, yet the firm apparently expects the reader to be unaware that hydrogen dioxide is hydrogen peroxide and capable of acting as an oxidizing agent.

"That the theoretical dilution employed is not likely to reach all the affected tissues in the same concentration has been pointed out. The pain and fibrillation following injection of the product are not different from what would be expected from the injection of an equal volume of any hypotonic solution. Attention is further drawn to the fact that the hypotonic action of distilled water causes muscle injury and that minor muscle injuries often terminate an acute attack of asthma.

"Despite all these rather obvious facts, the manufacturer has apparently achieved considerable success in marketing the product to physicians of this country. The Council therefore presents this published statement to inform the medical profession that the claims for the use of the product in the treatment of allergy are not founded on proved premises and that the available evidence does not support any hopeful claims. The manner in which the manufacturer has exploited the physician and the allergic patient of this country cannot be too vividly described and only supports the Council's plea that physicians seek competent advice before they adopt some new 'cure' or treatment; frequently they will find that it is not new, is not a cure, and for that matter is not even a treatment in the true sense of the word. Ethylene Disulphonate (Allergosil brand) manufactured by the Spicer-Gerhart Company of Pasadena and Sunland, Calif., is declared by the Council not acceptable."

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ACCEPTANCE OF PRODUCTS OF FIRMS FORMERLY NOT REPRESENTED IN NNR

(A report of the Council)

With the adoption of its new rules, the Council on Pharmacy and Chemistry abandoned certain of the old rules, one of which was concerned with the over-all promotional activity of firms submitting products for inclusion in New and Nonofficial Remedies. This does not mean that the Council is receding from its efforts to encourage the ethical and honest promotion of worth-while therapeutic agents; to the contrary, it is intended to make these efforts more effective by taking advantage of the changing attitude of the drug trade.

When the rule was originally adopted, a considerable proportion of pharmaceutical manufacturing firms placed much more emphasis on the exploitation of remedies for profit to the business than for profit to the patient, using a few better articles for "window dressing" rather than for serious promotion. The Council aimed to improve this situation by insisting that the major business of a firm should be in acceptable articles before any of its articles would be accepted by the Council. An increasing number of these firms have made commendable efforts to bring their policies in line with the objectives of the Council. This has been aided by the recent phenomenal developments in positive therapeutics which substitute striking improvement, demonstrable by rigorous methods, for the wishful empiricism of galenic fancies and render these even financially unprofitable.

The Council feels that it may safely take advantage of this improved situation and that it can do more good by aiding all firms to increase their proportion of acceptable products than by fighting a foe that is already vanquished. So the Council hopes, at least, but with a watchful eye to conditions. If its hopes should prove too optimistic, it can return to more restrictive policies.

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Typical Days

FROM THE SECRETARY'S AUGUST DIARY

—1ST—

THE new month comes upon us with the startling realization that the convention is only three weeks off and much remains to be done. An August convention plays havoc with vacations of office personnel. Whoever goes is sure to be needed for last minute jobs, but we are fortunate in the cooperative spirit which rules the few who bear the heaviest burdens. And in the midst of all the speculation comes a reassuring call from George Beal that all is progressing nicely at Pittsburgh with a fine local committee and Local Secretary "Steve" Wilson working harmoniously and steadily toward the successful accomplishment of the main objectives.

—2ND—

Today came the liaison officers of the Army, Navy and Public Health Service to discuss plans and the final report of the Committee on War Activities and Veterans Affairs. For the record we were photographed with Major Aabel, Commander Reese and Senior Pharmacist Kinsey. Some apprehension about a strike of printers which might have sad effects upon necessary printed matter for the convention. Fortunately the program is in the hands of the "old reliable" Mack Printing Co. which has done this job for many a year.

—3RD—

On this "off day" working at the office on convention reports and thinking of Glenn Sonnedecker speeding in an Army plane with other editors to Oak Ridge in Tennessee to see at first hand the developments in atomic fission which have medical and pharmaceutical significance. It is a tribute to the *Practical Pharmacy Edition* of the JOURNAL OF THE A. PH. A. to have its editor selected as the only pharmaceutical editor to accompany these science writers, under Army auspices, to headquarters of atomic bomb researches for the first public inspection.

—4TH and 5TH—

All these days putting finishing touches on the convention program at the office and working far into the night with able assistants.

—6TH—

Working most of the day with the Committee on Uniform State Laws which is doing splendid work in harmonizing conflicting views on controversial legislation. Principal attention focused on the pro-

posed uniform state barbiturate act. At 5:30 p. m. on the Liberty Limited for Chicago with N. A. B. P.'s Pat Costello, discussing many pending problems and receiving much good advice and information.

—7TH—

Rumbling into Union Station at Chicago at 9:25 a. m., and with Pat Costello making a bee line to the Pennsylvania ticket office to pick up a return reservation to Washington. Next to the College of Pharmacy of the University of Illinois for an all-day meeting with President-elect Serles and Vice-President-elect A. Lee Adams. It is plain that the incoming president of the A. PH. A. has really studied its organizational structure and committee setup and will streamline some of the latter for more efficient action. Much important business disposed of in short order and after telephone conversations with John Dargavel, Charles O'Malley and Austin Smith, dashing for the homeward bound Liberty Limited due in Washington tomorrow.

—8TH—

Arriving on time in Washington on the Pennsylvania is something to record. And now for the accumulated mail and convention details with a staff conference at lunch and a long evening at the desk.

—9TH—

Among the visitors today was Dean Rivkin of the Pharmacy Department of Southwestern Institute of Technology (Oklahoma).

—10TH—

An experience at the optician's which demonstrates the difference between a professional and a business attitude. Immediate attention was required at 5 p. m. to replace a broken lens on glasses needed very badly. The shop closes at 5:30 p. m. but since the repairs could not be made in half an hour the none too courteous admonition was to return tomorrow for the needed service. No plea of dire necessity had any effect and when we finally indicated that a profession should be ready to serve when its services are needed, especially in the health field, the bland and almost arrogant reply was: "This is not a profession, sir, it is a business and we maintain business hours." Undecided whether or not this carries a lesson for pharmacists. Anyway we shall remember that opticians do not class themselves as professionals.

—12TH—

Much of the day with the Committee on Status of Pharmacists in the Government Service, debating strategy with respect to the legislation proposed by the Surgeon-General of the Army to create a Medical Service Corps designed to include pharmacy and supersede the hard-earned Pharmacy Corps. Opportunity also to confer with Dargavel, Swain, DuMez, Henry Johnson and others on A. PH. A. convention program.

—13TH—14TH—15TH—

All these days at the desk and plugging away on reports and last minute details for the Pittsburgh meeting with telegrams and long distance calls

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galore, but everything seeming to click smoothly.

—16TH—

After the morning at the desk an early afternoon train for home and the quiet celebration of a birthday. As the years keep rolling by ever more speedily, one fathoms more readily the meaning in the words of forebears who longed for added years in which to accomplish that which they foresaw but never experienced.

—17TH—

Enjoying the sight and sound of speedboats on the Shrewsbury River, come for the annual races in this famed spot. A part of the day spent with books and papers so essential to keeping abreast of world affairs in which pharmacy will play no mean part.

—18TH—

And now by automobile to Washington so that this transportation may be available for carrying the precious records and files to Pittsburgh at the week end. A nice day for a six-hour trip to cover 230 miles with traffic not too heavy.

—19TH—

A busy Monday with mail piled high and the telephone jingling merrily. All the staff enthusiastic about the coming meeting at Pittsburgh.

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—20TH—

Among the callers today was Roy Jacquith and family from Topeka, Kan., on the way to Pittsburgh.

—22ND—

Visits today from Mrs. A. C. Taylor and Mrs. Charles Fuhrman of Washington, D. C., active workers in the Women's Auxiliary of the A. PH. A., who were pleased with the newly furnished lounge for our women employees. To dinner at the Watergate with Dr. and Mrs. A. G. DuMez after their visit to our building where Mrs. DuMez noted the furnishings and arrangement of the women's lounge in preparation for a report to the Executive Committee of the Women's Auxiliary.

—24TH—

Now the trip to Pittsburgh with Frank Deibert, Miss Lyons and Miss Bergner in the Dodge, loaded to the top with brief cases, filing cabinets, displays, reports and what not. Making good time via Frederick, Hagerstown, Breezewood and the fine Pennsylvania Turnpike, with a stop-off for luncheon at Hagerstown and arriving in Pittsburgh at 7:30 p. m.

—25TH-30TH—

These days at Pittsburgh carrying on throughout the 92nd convention in the 94th year of the history of the A. PH. A. All of which has been described elsewhere in this and previous issues of the JOURNAL. It was a great convention because the people who attended and the officers, speakers and committee chairmen who furnished the inspiration and food for thought that made up the program were well prepared and the membership attended meetings on time and contributed to the discussion of vital programs, all of which led to conclusions now in the form of resolutions and ready for translation into action.

—31ST—

Now comes the reorganization meeting of the Council with the departure of several members whose terms expired and the addition of new men in their places. Thus we lose the two Charlies, Evans and Wilson, and take in Earl Serles, A. Lee Adams, Harold Darnell and Glenn Jenkins. It is always with a feeling of sadness that one sees capable and enthusiastic members depart from administrative and policy-forming committees. The compensating feature is that the ASSOCIATION is composed of many able minds and willing hands so that capable replacements are available. All the forenoon and much of the afternoon reviewing the resolutions and planning the activities for the year to come. Next with Editor Sonnedecker preparing parts of the report of the convention to make sure of its inclusion in the September JOURNAL which should be out within 10 days.

New A. Ph. A. Members

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEMBERS ADMITTED DURING THE MONTH PRECEDING AUGUST 20:

ALABAMA

Alley, Lehman M., Birmingham
Little, William F., Wetumpka
McWilliams, Maury, Prattville
Moore, Tom L., Mobile
Priddle, Osgood Daniel, Jr., Birmingham
Sister Vincent Kurtzeman, Birmingham
Williams, Harrison M., Birmingham

ARIZONA

Dudding, Charles W., Holbrook
Duncan, Alfred J., Glendale
MacAlpine, Fred C., Phoenix
Prell, Isadore, Tucson

ARKANSAS

Albritton, John H., Clarksville
Brown, Ben E., Ft. Smith
Neal, Marvin B., West Crossett
Willmon, Prince A., Ft. Smith

CALIFORNIA

Adams, Lacey B., Pasadena
Barnum, Florice, Los Angeles
Boles, Manfred J., Pasadena
Bruschers, Arthur A., San Francisco
Burroughs, S. J., San Francisco
Buxton, Charles E., Eureka
Clark, Hewey V., San Francisco
Cool, Harold N., Culver City
Fansher, John T., Romona
Foote, Frank A., Long Beach
Johanson, Iver E., Redding
Kingwell, Benjamin J., Pasadena
Kohn, Leonard N., Mount Shasta
Margolin, Leon, South Gate
Mir, Frank, Sacramento
Mooers, Clyde C., Brentwood
Morgan, Irwin R., Bakersfield
Mortensen, Mark M., Gustine
Okamoto, S. H., San Francisco
Oreggia, Sabina S., Gonzales
Solow, Morris A., Los Angeles
Tobis, Abe, Los Angeles
Wurster, Martin J., San Francisco
Yant, Zelba, Pomona

COLORADO

Chiappini, Bert W., Denver
Chirnside, Lloyd M., Denver
Greenfield, Lewis J., Denver
Hyde, John F., Denver
Lane, Frank A., Denver
Petersen, Eugene E., Salida

CONNECTICUT

Abromaitis, J. M., Bridgeport
Carofano, Edward, West Haven
Cook, Harry H., Norfolk
Jalkow, John, Waterbury
Laskarzewski, Joseph J., Meriden
Leff, Aaron M., New Haven
Leone, Daniel C., Norwich
Parks, C. Clayton, Washington Depot
Schine, Samuel, Bridgeport
Sullivan, Daniel G., Watertown
Weisman, Isadore, Bristol
White, Wallace F., North Haven
Windt, Ernest, New Canaan

DELAWARE

Potocki, Paul, Wilmington
Webb, Harry C., Wilmington

DISTRICT OF COLUMBIA

Avrunin, Hyman, Washington
Cockey, Edwin O., Washington
Donaldson, John E., Washington
Simpson, John F., Washington

FLORIDA

Coe, E. G., Hastings
Crowe, David F., Bay Pines
Douglas, H. B., Bonifay
Falcon, Howard J., Delray Beach
Griffin, Edwin A., Plant City
Troxler, T. L., St. Petersburg

GEORGIA

Baldwin, Asbury Q., Madison
Blasingame, Walter A., Moultrie
Burnham, William O., Atlanta
Coursey, William S., Jr., La Grange
Crews, Joseph R., East Point
Fuller, George L., Augusta
Gaines, W. C., Atlanta
Keith, Robert E., Omega
Mitchell, R. M., Griffin
Paniello, Joseph, Attapulgus
Roberts, Y. L., Donalsonville

ILLINOIS

Bakkers, Andrew, Chicago
Biasi, Edward C., Bloomington
Brin, Mandel, Chicago
Cleveland, Harold V., Waukegan
Clough, Walter R., Milledgeville
Coe, Allan J., Springfield
Cypher, Cloyd M., Chicago
Daab, John A., Columbia
Divine, Edward H., Evanston
Elder, Otto V., Chicago
Hoffman, Thomas F., Rockford
Hook, Delbert L., Grayslake
Hull, Jacob J., E. St. Louis
Humma, Henry H., Metropolis
Johnson, J. Earl, Bradley
Kaszeski, Florence C., Chicago
Kehr, Floyd, West Chicago
Kelch, Henry C., Wilmette
Koehler, Walter G., Kankakee
Kunka, Robert V., Chicago
Lacey, John F., Skokie
Law, Ives, Belvidere
Lohr, Joseph E., Arlington Heights
Lusk, Miles E., Chicago
McPike, Cyrus W., Rock Island
Middleton, Leon E., Greenfield
Mottar, John A., Edwardsville
Mrazek, Leo L., Chicago
Munch, Graham W., Lake Bluff
O'Brien, Raymond F., Chicago
Palmer, George D., Chicago
Pavlicek, Adolph V., Cicero
Pinta, Edward F., Chicago
Sherrick, O. C., Carthage
Stahl, August F., Villa Park
Steimle, F. W., Washington
Stoppel, Albert W., Chicago
Stotlar, Jo., Pinckneyville
Volkel, Clarence H., Chicago

INDIANA

Akerman, R. D., Lebanon
Baker, Jean A., Indianapolis
Baldwin, Wilbur C., Seymour
Baxter, Ernest, Rochester
Billeisen, H. W., Indianapolis
Blower, James A., Terre Haute
Bogart, Kenneth S., Indianapolis
Buckmaster, S. M., Geneva
Christy, L. E., Fowler
Farmer, Joseph B., Indianapolis
Fifield, Orval W., Hammond
Hatfield, Charles L., Seymour
Hinton, Charles M., Indianapolis
Knobel, Albert C., South Bend
Lieberman, Morris D., Gary
Miller, Henry C., Fort Wayne
Moore, Claude C., Indianapolis
Murray, John S., Vincennes
Owen, Carl E., Richmond
Redmond, John P., Hartford City

Shartle, Clarence F., Stilesville
Sister M. Constantina, Michigan City
States, Harold S., Wabash
Stengel, Ernest, Berne
Ullrich, Wilfrid J., Aurora
Zimmerman, Martin F. W., Fort Wayne

IOWA

Beard, Emmett H., Waverly
Dawson, Lisle L., Wilton Junction
Myers, L. H., Indianola
Ragatz, George, Jr., Dubuque
Roe, Charles P., Oskaloosa
Seydel, G. L., Davenport
Steussy, Gerald H., Ft. Dodge
Stoner, Dorthea F., Perry
Watts, Loyd H., Odebolt
Witte, William A., Burlington

KANSAS

Anderson, L. M., Victoria
Childs, Mac, El Dorado
Clark, Sylvester L., Perry
Cygiel, John G., Topeka
Harkness, Charles A., Hays
Haskin, Ralph, Harper
Higdon, William Jr., Goodland
Kern, Leo J., Leavenworth
Litel, Lew A., Frankfort
Lynch, Mary H., Larned
Phillips, George H., Kansas City
Schulz, Paul W., Beloit
Sister M. Loyola Huslig, Garden City

KENTUCKY

Ashbury, Prosser L., Louisville
Buehring, Harry F., Louisville
Countzler, R. P., Greenville
Daniel, Clarence E., Louisville
Homell, Thomas J., Pikeville
Hudspeth, James B., Bowling Green
Hurwitz, Samuel, Louisville
Knoefel, Joseph O., Louisville
Lee, Frank L., Middlesboro
List, L. W., Paducan
Parker, Rexford, Maysville
Price, William A., Louisville
Travis, Charles J., Lexington
Wilson, Albert G., Mayfield
Wood, R. Clifton, Princeton

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Cancienne, A. W., New Orleans
Constantino, Leo A., Ruston
Norman, David J., Houma
Oplatak, Joseph C., New Orleans

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Cohn, Harry R., Baltimore
Crozier, John A., Baltimore
Hoshall, Edward M., Baltimore
Houser, Jacob W., Emmitsburg
Klein, B. Franklin, Jr., Baltimore
Middlekauff, H. P., Hagerstown
Robbins, Sam S., Baltimore
Schwartz, John T. C., Towson
Schwatka, W. Herdman, Jr., Baltimore
Sencindiver, Judson H., Cockeysville
Stam, Donald F., Chestertown
Strevig, John A., Baltimore
Yankeloff, Louis C., Baltimore

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Beck, Joseph S., Wollaston
Bemis, Edward O., Rockland
Bram, Francis, Allston
Browne, Frederic T., Jr., New Bedford
Burgess, Frank J., Methuen
Collins, John P., Waltham
De Nicola, Romulus, Wollaston
Driscoll, Gladys Turner, Everett
Elmadjian, Fred, Worcester
Fallon, Michael J., Wellesley Hills
Ferruolo, Albert, Lawrence
Flaherty, Francis A., Lynn
Franzen, Roy A., Brocton
Frodema, Henry A., Springfield
Guarnera, Joseph R., Springfield
Halperin, Norman, Springfield
Hayward, Eliot A., Fairhaven
Heaps, E. Warren, Jr., Arlington
Holden, Charles D., Lowell
Jackson, Clarence N., Boston
Kaplovitz, George, Wintrop
Kearns, John M., Somerville
Kelly, Aloysius, Everett
Korey, Harry, Dorchester
Lang, Walter J., Dorchester
Lavan, Edward F., Worcester
Mandell, Louis J., Medway
Marshall, Alton L. F., Jr., Waltham
Mayer, Robert, Sharon
McAuliffe, Philip J., Lynn
McCarthy, Charles H., Fitchburg
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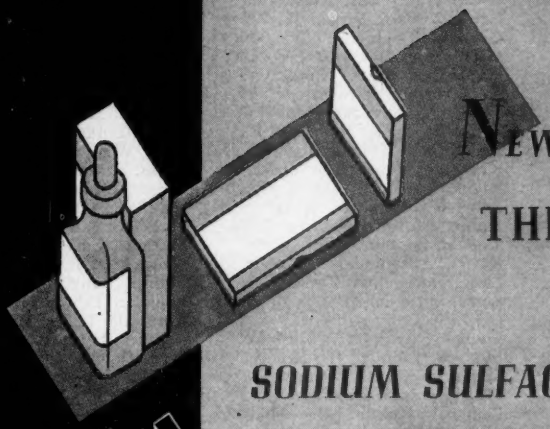

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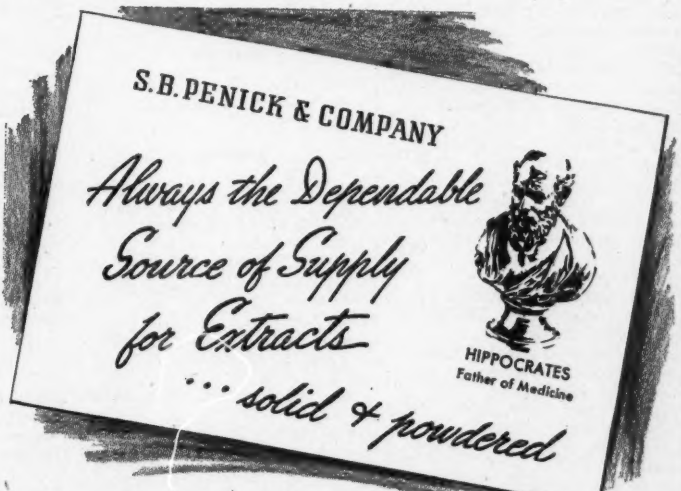

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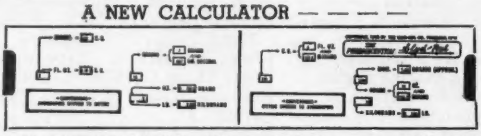

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